Motorola Vanguard

Supports Management Module SM-MOT1000

APRISMA

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POWERED SOLUTIONS

Device Management

Contents

Introduction

This section introduces the SPECTRUM Device Management documentation for Motorola Vanguard devices.

This introduction to the Device Management documentation for Motorola Vanguard devices contains the following information:

- *Purpose and Scope* (Page 7)
- *Required Reading* (Page 7)
- *Supported Devices* (Page 8)
- *The SPECTRUM Model* (Page 9)

Purpose and Scope

Use this documentation as a guide for managing Motorola Vanguard devices with the SPECTRUM management module SM-MOT1000. The documentation describes the icons, menus, and views that enable you to remotely monitor, configure, and troubleshoot Motorola Vanguard devices through software models in your SPECTRUM database.

Only information specific to the supported management module is included under this documentation topic. For general information

about device management using SPECTRUM and for explanations of basic SPECTRUM functionality and navigation techniques, refer to the topics listed under *Required Reading* (Page 7).

Required Reading

To use this documentation effectively, you must be familiar with the information covered by the other SPECTRUM online documentation topics listed below.

- ***Getting Started with SPECTRUM for Operators***
- ***Getting Started with SPECTRUM for Administrators***
- ***How To Manage Your Network with SPECTRUM***
- ***SPECTRUM Views***
- ***SPECTRUM Menus***
- ***SPECTRUM Icons***
- ***SPECTRUM Software Release Notice***

Supported Devices

The SPECTRUM management module SM-MOT1000 currently lets you model the Motorola Vanguard devices described below.

Vanguard 6435 Multiservice Access Router. A compact, desktop router with an Ethernet interface and three expansion slots. Two slots can be used for Enhanced Daughter Cards for high bandwidth applications.

Vanguard 6455 Multiservice Access Router. A desktop or rack-mountable router with an Ethernet interface and five expansion slots. Two slots can be used for Enhanced Daughter Cards for high bandwidth applications.

Note: Support for the Vanguard 6400 series of devices does not include complete proprietary MIB support as of SPECTRUM 6.6 SP4.

Motorola Vanguard 6520 Multimedia Periphery Router (MPRouter). A WAN access product optimized for branch offices that require consolidation of legacy traffic with LAN traffic over dedicated or switched X.25, Frame Relay, point-to-point, multipoint, and ISDN circuits.

Motorola Vanguard 6560 MPRouter PRO. This device extends the 6520 MPRouter capabilities for large branch offices with higher throughput needs, offering voice relay options for analog and digital voice applications as well as all the features and options of the 6520.

Motorola Vanguard 300/320. A network access device that allows Ethernet LANs and a combination of terminals, PCs, workstations, and controllers to access public or private network services such as ISDN, Frame Relay, and X.25. The Vanguard 320 is the new and improved, next generation of the Vanguard 300 and is fully compatible with the Vanguard 300.

The SPECTRUM Model

SPECTRUM uses a single device model type, **MotMPRouter**, for modeling any of the supported Motorola Vanguard devices. MotMPRouter models are represented in SpectroGRAPH views by Device icons. As Figure 1 shows, the appearance of the Device icon varies slightly depending on the kind of view it appears in.

Figure 1:   Small and Large Device Icons

Small Device icon appears in Topology, Device Topology, Application, and Container views.

Large Device icon appears in Device Topology, Location, and Interface Device views.
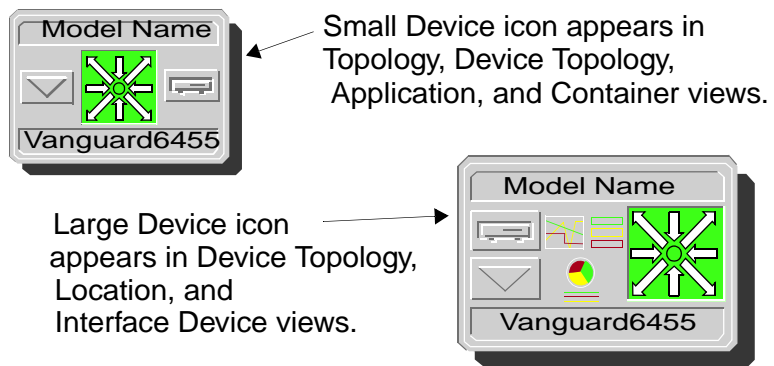
The device-specific Icon Subviews menu options available from the Device icon are listed below.

Option	Accesses the...
Fault Management	Fault Management view, which is described in the ***How to Manage Your Network with SPECTRUM*** documentation.
Device	*Device Views* (Page 10)
Application	*Application Views* (Page 15)
Configuration	*Configuration Views* (Page 114)
Primary Application	Menu options that let you select either Gen Bridge App or MIB-II as the primary application.

The rest of this document covering management module SM-MOT1000 is organized as follows:

- *Device Views* (Page 10)
- *Application Views* (Page 15)
- *Configuration Views* (Page 114)

Device Views

This section describes the Device views and subviews available for models of Motorola Vanguard devices in SPECTRUM.

Device views use icons and labels to represent the modeled device and its components, such as modules, ports, and applications. There are two types of Device views for MotMPRouter models.

- *Interface Device View* (Page 10)
- *Port Icons* (Page 13)

Interface Device View

Access: *From the **Icon Subviews** menu for the MotMPRouter Device icon, select **Device > Interface**.*

This view provides dynamic configuration and performance information for each of the device's serial/network I/O ports, which are represented by Interface icons in the bottom panel of the view, as shown in Figure 2. The middle panel of the view also displays a Device icon, which allows you to monitor device operation and access other device-specific views.

Figure 2:   Interface Device View
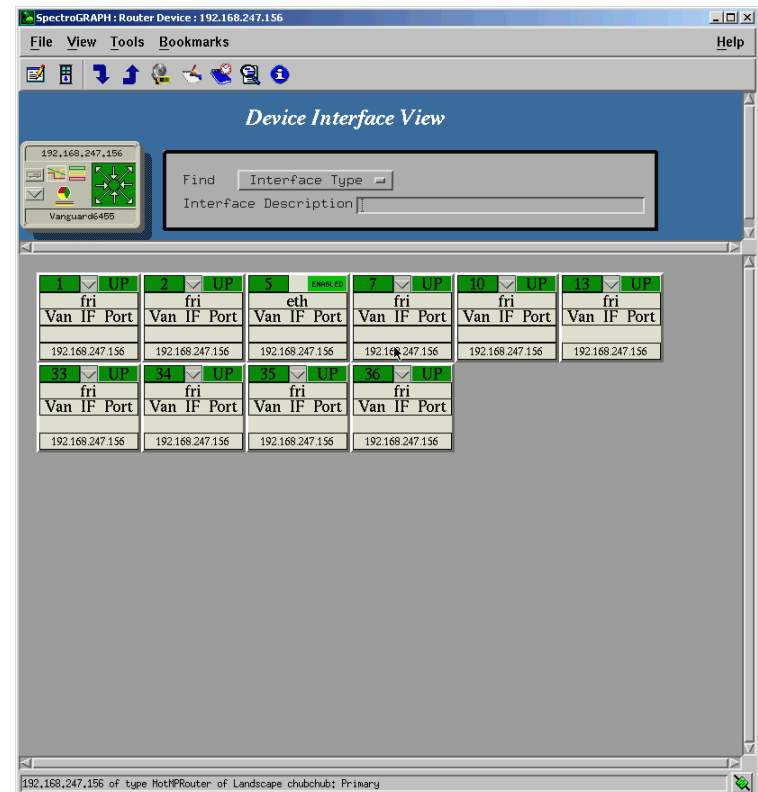
Interface Icons

Figure 3 shows a close-up of an Interface icon from an Interface Device view. Most of the informational labels on the icon also provide double-click access to other views, as explained in the following label descriptions.

Figure 3:   Interface Icon

(a)   (b)

ISO88023 —— (c)

Motorola 65 —— (d)

0:0:30:68:6F:1B —— (e)

0:0:0:0 —— (f)

a   *Interface Number Label*

b   *IF Status Label*

c   *Interface Type Label*

d   *Network Type Label*

e   *Physical Address Label*

f   *IP Address Label*

Interface Number Label
This label displays the interface number.

IF Status Label
This label displays the current Operational Status of the interface (see Table 1). Note that the background color of the label also depends on the interface's current Administrative Status, which is set by the user (see *Interface Status View* on Page 13). This view can be accessed by double-clicking this label.

Table 1:   Interface Status Label Colors

Color	Operational Status	Administrative Status	Label Text
Green	ON	ON	ON
Blue	OFF	OFF	OFF
Yellow	OFF	ON	OFF
Red	Testing	Test	TST

Interface Type Label
This label identifies the type of interface—e.g., Ethernet, FDDI, Other, etc. Double-click this label to access the *Secondary Address Panel* (Page 13).

Network Type Label

This label identifies the type of network to which the interface is connected. Double-click this label to open the Model Information view for the interface.

Physical Address Label

This label displays the physical (MAC) address of the interface. Double-click the label to open the Interface Address Translation table, which cross-references network addresses (IP addresses) to physical (MAC) addresses for selected nodes between networks. Double-clicking on any column entry opens an address-specific Address Translation Table Information view. This view provides the same information as the corresponding row for the IF Address Translation table, but allows you to modify field values.

IP Address Label

This label displays the IP address for the interface. Double-click this label to open the *Secondary Address Panel* (Page 13), which allows you to change the address and mask for this interface.

Interface Icon Subviews Menu Options

Table 2 lists the Icon Subviews menu options available for the Interface icon.

Table 2: Interface Icon Subviews Menu

Option	Opens the . . .
Detail	Interface Detail view, which displays Packet, Error, and Discard Breakdown pie charts.
IF Status	*Interface Status View* (Page 13).
IF Configuration	*Interface Configuration View* (Page 115).
Model Information	Associated Model Information views for the selected interface.
IF Address Translation Table	Interface Address Translation Table view, which shows the Physical and Network address for each interface.
Secondary Address Panel	*Secondary Address Panel* (Page 13).
Thresholds	Interface Threshold view, which allows you to set the on/off alarm thresholds for load, packet rate, error rate, and % discarded.

Interface Status View

Access: *From the* ***Icon Subviews*** *menu for the Interface icon in the Interface Device view, select* ***IF Status****.*

This view provides information on the operational status of the interface and allows you to enable or disable the port.

Operational Status
The current state of the interface. Valid values are: `On`, `Off`, or `Testing`.

Administrative Status
This button allows you to select the desired operational state of the interface. Valid values are: `On`, `Off`, or `Testing`.

Secondary Address Panel

Access: *From the* ***Icon Subviews*** *menu for the Interface icon in the Interface Device view, select* ***Secondary Address Panel****.*

This panel provides a table of IP addresses and masks obtained from the Address Translation table within the device's firmware. You can change the current address displayed in the **IP Address** field by selecting an entry from the table in this panel and clicking the **Update** button.

Port Icons

Figure 4 shows a close-up of a Port icon from a Chassis Device view.

Figure 4:　Port Icon
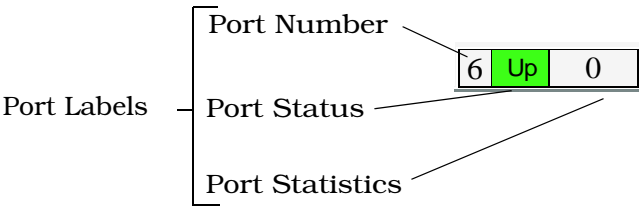
Port Labels

As shown in Figure 4, each selectable port label is comprised of three smaller labels as described below. Clicking on any of these labels highlights the whole port label so that you can access the port-specific **Icon Subviews** menu options listed in Table 3.

- **Port Number -** Identifies a particular port. Double-click this label to open a Port Notes view that allows you make, revise, save, retrieve, and mail annotations about the port.

- **Port Status** - Displays the current operating status of the port and the corresponding color for that status (green if the port is up, red if the port is down or in test mode). Double-click this label to open the *Traps, Events, and Alarms* (Page 116).

- **Port Statistics** - Displays the number of frames (packets) transmitted or received by this port since the last reset. Double-click this label to open the Port Performance View.

Port Label Icon Subviews Menu

Table 3 lists the Icon Subviews menu options for the Port icon.

Table 3: Port Label Icon Subviews Menu

Option	Opens the . . .
Port Notes	Notes view, which allows you to make, revise, save, retrieve, and mail annotations about the selected port.
Port Configuration	*Traps, Events, and Alarms* (Page 116), which provides more detailed configuration information about the selected port.
Port Performance	Provides statistical information about packet traffic through the selected port.

Application Views

This section describes the main Application view and the associated application-specific subviews available for models of Motorola Vanguard devices in SPECTRUM.

Access: *From the* **Icon Subviews** *menu for the Device icon, select* **Application**.

When a device model is created, SPECTRUM automatically creates models for each of the major and minor applications supported by the device. The main Application view identifies all of these application models, shows their current condition status, and provides access to application-specific subviews. Figure 5 shows this view in the Icon mode. If you prefer the List mode, which displays applications as text labels, select **View > Mode > List**.

For more information on this view, refer to the *MIBs and the Application View* documentation.

Figure 5:   Application View
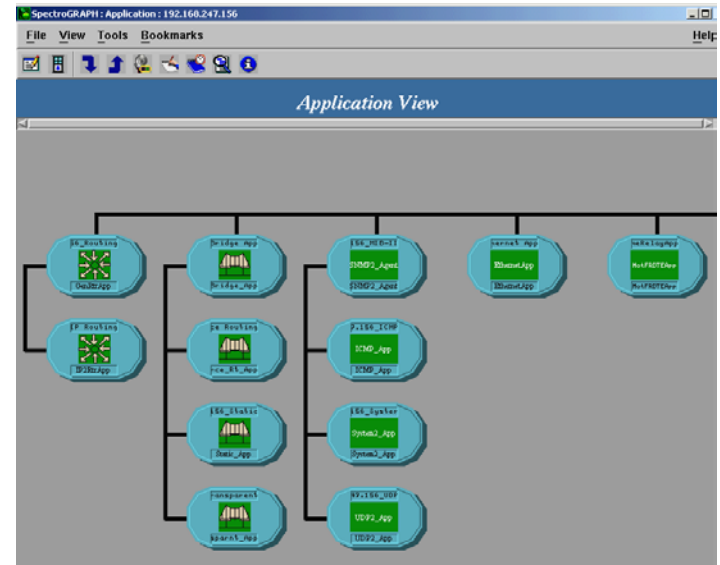
Supported Applications

SPECTRUM's applications can be grouped within two general categories as follows:

- Applications associated with non proprietary MIBs. See *Common Applications* (Page 16) below.
- Applications associated with device-specific MIBs. See *Device-Specific Applications* (Page 16).

Common Applications

In general, common applications represent the non-proprietary MIBs supported by SPECTRUM. The SPECTRUM common applications documents are listed below.

> **Note:** These documents are available for viewing at:
>
> www.aprisma.com/manuals/

- ***Routing Applications***
- ***Bridging Applications***
- ***Transmission Applications***
- ***MIB II Applications***
- ***Technology Applications***

Device-Specific Applications

SPECTRUM imports the following device-level proprietary MIBs into its database:

- BCST-OPT-MIB
- BRIDGE-OPT-MIB
- CDX-6500-COMMON-MIB
- DC-OPT-MIB
- DCP-OPT-MIB
- DSD-OPT-MIB
- FRDCE-OPT-MIB
- FRDCTE-OPT-MIB
- ISDN-OPT-MIB
- MX25-OPT-MIB
- NS-OPT-MIB
- ROUTER-OPT-MIB
- SS-OPT-MIB
- T1E1-OPT-MIB
- TBOP-OPT-MIB
- TFTP-OPT-MIB
- WAN-OPT-MIB
- X25_OPT-MIB

These MIBs can be used in conjunction with SPECTRUM's optional customization products (referred to as the Level I Tool Kits) to create views that display the condition of selected MIB objects.

Note: Aprisma Management Technologies can provide training, technical assistance, and custom engineering support services for creating application models and their associated views.

The views and subviews available for Motorola Vanguard device-specific applications are described in the rest of this section, grouped by major application as listed below:

Motorola Bandwidth Management Applications (MotBWMgmtApps)

This major application (model type MotBWMgmtApps) has a single minor application: the Motorola Data Compression Application (model typeMotDCApp). The **Icon Subviews** menu for this application provides access to the following application-specific subviews:

Data Compression General Statistics View

Access: From the **Icon Subviews** menu for the MotBWMgmtApp Application icon, select **General Statistics.**

This view provides descriptive information about the data compression (DC) module installed in the modeled device's motherboard and general statistical information applicable to all DC channels. Buttons at the bottom of the view provide access to subviews for Encoder/Decoder Queue Statistics and DC Channel Controls. The DC general statistics are displayed in the following read-only fields:

DSPStatus

Indicates whether there is a DC SIMM DSP installed in the motherboard and, if so, the current status (`up` = installed and operational; `down` = installed but non-functional; `missing` = no DC SIMM DSP is installed).

Soft-Rev

The revision number of the DC handler software.

Firm-Rev

The DC function revision number (e.g., the DSP firmware revision number).

DCChan

The maximum number of DC channels supported.

ChanInUse

The number of DC channels currently in use.

SmltChanUse

The highest number of DC channels in use at any one time since the last stats reset.

ConnRejects

Number of call requests rejected due to the unavailability of DC channels.

AggCRatio

Ratio of incoming characters to outgoing characters for all DC channels over the past minute.

The following two buttons are located at the bottom of the Data Compression General Statistics view:

| Encoder and Decoder Queue Statistics |

This button accesses both current and historical information about the encoder and decoder queues— see *Queue Statistics View* (Page 18).

| DC Channel Controls |

This button accesses a view that lets you control statistics and history buffer reset parameters for individual DC channels—see *DC Controls View* (Page 19).

Queue Statistics View

Access: In the Data Compression General Statistics view, click the **Encoder and Decoder Queue Statistics** button.

This view provides the following information about the encoder and decoder queues.

EncFrames

Current number of frames in the encoder queue, waiting to be compressed.

MaxEncQueue

Highest number of frames that were in the encoder queue at any one time since the last stats reset.

TimeOfMaxEnc

Time when the current **MaxEncQueue** value was registered.

DecFrames

Current number of frames in the decoder queue, waiting to be decompressed.

MaxDecQueue

Highest number of frames that were in the decoder queue at any one time since the last stats reset.

TimeOfMaxDec

Time when the current **MaxDecQueue** value was registered.

DC Controls View

Access: *In the Data Compression General Statistics view, click the* **Encoder and Decoder Queue Statistics** *button.*

This view contains a table that lets you determine whether the statistics and the vocabulary/history buffer for each channel will be automatically reset when the channel is active. Column headings are described below:

Channel Number

Index number identifying a particular channel.

Channel Status

Indicates whether DC statistics will be automatically reset for this channel when it is active. Possible values are: `reset` or `noreset`.

History Buffer

Indicates whether the vocabulary/history buffer will be automatically reset for this channel when it is active. Possible values are: `reset` or `noreset`.

Data Compression Channel Statistics View

Access: *From the* **Icon Subviews** *menu for the MotBWMgmtApp Application icon, select* **Channel Statistics.**

This view provides the data compression (DC) statistics listed below for individual channels. Buttons at the bottom of the view provide access to subviews for Encoder/Decoder Queue Statistics and DC Channel Controls. Column headings are as follows:

Number

Index number identifying a particular channel.

Time Reset
Time when node was restarted or statistics were reset by a CTP/SNMP Manager command.

State
Current activity state of the channel. See Table 4 for expanded descriptions of possible states.

Table 4: Channel State Descriptions

State	Description
dsp-down	DSP is down.
idle	DSP is ready to be assigned to a connection.
negotiating	Source has accepted the Call Request and is waiting for a Call Accept from the destination node.
data-passing	Normal data passing state.
ap-clearing	Call Clear request arrived from access side.
np-clearing	Call Clear request arrived from network side.
clearing-call	A call collision or a Call Clear along with an X.25 reset or a "start buffer discarding."
flushing-on-clr	Call has been cleared with FLUSH; waiting for packets to flush from DC Handler rings.
flushing-data	Waiting for x.25 confirm.
flushing-dc-ring	Waiting for the data on the DC Handler ring to be flushed after an x.25 confirm or stop discard.
clearing	Call has been cleared.

SourceChan
Access Protocol's identity string.

DestChan
Network Protocol's identity string.

XmitRatio
Actual compression ratio for outgoing data. This is a 60 second snapshot. Range is 1 - 9.2.

The following three buttons are located at the bottom of the Data Compression Channel Statistics view.

Encoder Queue Statistics

This button accesses a view providing encoder queue information for individual DC channels— see *Encoder Queue Statistics View* (Page 21).

Decoder Queue Statistics

This button accesses a view providing decoder queue information for individual DC channels— see *Decoder Queue Statistics View* (Page 22).

DC Channel Controls

This button accesses a view that lets you control statistics and history buffer reset parameters for individual DC channels—see *DC Controls View* (Page 19).

Encoder Queue Statistics View

Access: *In the Data Compression Channel Statistics view, click the **Encoder Queue Statistics** button.*

This view contains a table of encoder queue statistics for individual DC channels. Column headings are described below:

ChanNo
Index number identifying a particular channel.

EncFrames
Number of frames received from the Access Protocol to be compressed.

CharIN
Number of bytes pushed into the encoder to be compressed.

CharOUT
Number of compressed bytes produced by the encoder.

AEChange
Number of times the encoder switched from compressed mode to anti-expansion mode.

AEFrames
Number of anti-expansion frames sent by the encoder.

AEstatus
Indicates whether anti-expansion mode is on.

Decoder Queue Statistics View

Access: *In the Data Compression Channel Statistics view, click the* **Decoder Queue Statistics** *button.*

This view contains a table of decoder queue statistics for individual DC channels. Column headings are described below:

ChanNo
Index number identifying a particular channel.

DecFrames
Number of frames received from the Network Protocol to be decompressed.

CharIN
Number of bytes pushed into the decoder to be decompressed.

CharOUT
Number of decompressed bytes produced by the decoder.

AEChange
Number of times the decoder switched from compressed mode to anti-expansion mode.

AEFrames
Number of anti-expansion frames received.

AEstatus
Indicates whether anti-expansion mode is on or off.

BadFrames
Number of decoded frames detected by the decoder that have been corrupted. This includes frames with bad headers.

BadHeaders
Number of decoded frames detected by the decoder that have a bad header.

PktDiscard
Number of packets discarded while processing an X.25 reset or during node congestion.

Motorola Configuration Applications (MotConfigApps)

This major application (model type MotConfigApps) has six minor applications (model types MotCSISApp, MotNSApp, MotSSApp, MotTFTPApp, MotVCApp, and MotWANApp). The Icon Subviews menus associated with these applications provide access to the following application-specific views:

- MotCSISApp
  - *CSIS Software Key and NUI Password Tables View* (Page 23)
  - *Authorization Tables View* (Page 23)
- MotNSApp
  - *NS Channel Information View* (Page 24)

- MotSSApp
  - *Switched Service Configuration Table View* (Page 25)
  - *Backup Port Statistics Table View* (Page 28)
  - *Port Statistics Table View* (Page 29)
- MotTFTPApp
  - *TFTP Statistics View* (Page 30)
- MotVCApp
  - *SVC Calls Table View* (Page 31)
  - *PVC Setup Configuration Table View* (Page 32)
  - *Route Selection Configuration Table View* (Page 32)
- MotWANApp
  - *LAN Connection Configuration Table View* (Page 33)
  - *Data Summary Statistics View* (Page 36)

CSIS Software Key and NUI Password Tables View

Access: *From the* **Icon Subviews** *menu for the MotCSISApp Application icon, select* **Key/NUI Table.**

This view provides software key and password configuration information for optional software installed on the modeled device. It contains the following two tables:

- *Software Key Table* (Page 23)

- *NUI Password Table* (Page 23)

Software Key Table

This table displays key values for optional software. Entries are numbered sequentially starting with 1.

NUI Password Table

This table lists the Network User Identification (NUI) password for each user account and specifies which entry in the PAD Prompt Table is used as a PAD prompt after the user has entered a valid password. "0" indicates the standard asterisk prompt.

Authorization Tables View

Access: *From the* **Icon Subviews** *menu for the MotCSISApp Application icon, select* **Authorization Tables.**

This view provides port-specific information about optional software installed on the modeled device. It contains the following two tables:

- *Software Authorization Table* (Page 23)
- *Port Authorization Table* (Page 24)

Software Authorization Table

For each software option installed, this table indicates the maximum number of ports supported (or the value 65535 if unlimited), the

number of ports actually being used, and whether all use of the option was authorized or any use was unauthorized. Any attempts to use the option on more than the number of supported ports constitutes unauthorized usage.

Port Authorization Table

For each port (1 through 54), this table indicates whether usage has been authorized or unauthorized. Any attempted use of the port for a particular software option that would exceed the port limit listed in the Option column of the Software Authorization table constitutes unauthorized usage.

NS Channel Information View

Access: *From the **Icon Subviews** menu for the MotNSApp Application icon, select **NS Channel.***

This view lets you initiate and monitor channel information for the modeled device. The view has the following two defined areas:

- *Channel Configuration* (Page 24)
- *Channel Statistics* (Page 25)

Channel Configuration

This section displays the following information:

Number
The Network Services Configuration Table entry being configured by the other parameters in the record.

PortStnId
The port and station on which the Network Services Data Compression feature will be enabled. The wild card (match anything) character is * and can also be part of the entry. Valid port types are: X25, FRA, LCON, TCOP, and TBOP.

Used
This parameter specifies the Network Services features level. Table 5 displays the valid parameters and descriptions:

<div align="center">

Table 5: NS Features

</div>

Parameter	Description
disable	The feature is not requested.
negotiate	Negotiate for the feature. The feature is desired, but if not available bring up the virtual circuit anyway, without the feature.
required	Required for call. Bring up the connection only if the feature is available on both ends.
forceOn	The feature is required for the circuit to come up.

Channel Statistics

This section displays the following information:

UsedChan
The number of NS Channels in use.

MaxChan
The maximum number of NS Channels used.

UnavailChan
The number of NS Channels not available for allocation.

Switched Service Configuration Table View

Access: From the **Icon Subviews** menu for the MotSSApp Application icon, select **Configuration Table.**

This view lists the Configuration parameters that makeup the Switched Service/LBU Table. Column headings are as follows:

Number
The particular Switched Service/LBU Table entry being configured. The number of instances defined by this entry depends on the configured value of the Maximum Switch Service Entry parameter in the Node record (up to a maximum of 1024 entries). If this value is 0, no switched Service/backup links may be configured i.e. this table will be empty.

Destination
A unique name that identifies this entry.

Monitored Port
The X.25 port to be monitored for link failure. This is the port whose calls are rerouted in the event of port failure. The format must be the following: X25-n, FRI-nSm OR BRI-nCp where n is the port number, m is the station number and p is BRI channel number.

Backup Port

The port or channel that acts as the backup when there is a port failure on the port specified by the parameter Monitored port, or primary destination port (activated by call). The format must be the following: X25-n or BRI-nCm, where n is the port number and m is the channel number.

Dialed No.

The telephone numbers that will be dialed when the backup port is activated. To enter your own telephone number, use any combination of the following characters:

0-9   Decimal
:   Wait Tone
<   Pause
=   Separator 3
>   Separator 4
P or p Dialing to be continued in PULSE mode.
T or t Dialing to be continued in DTMF mode.
&   Flash

To have the modem dial one of its pre-programmed telephone numbers, enter:

#n   where 'n' identifies the pre-programmed telephone number stored in the modem.

Act Mode

This specifies how the switched service/backup port will be activated. Table 6 displays the activation modes and descriptions:

Table 6: Activation Mode

Mode	Description
fail	Activate the backup port upon link failure.
call	Activate the backup port upon a call request.
either	Activate the backup port upon link failure or a call request.
newvalFail	Same functionality as 'fail,' new enumeration added for RFC1155 compatibility.

Deact Mode

This specifies how the switched service/backup port is deactivated after the original link is up. Table 7 displays the deactivation modes and descriptions:

Table 7: Deactivation Modes

Mode	Description
none	Backup port can only be deactivated by operator intervention.
busyout	The backup port is deactivated after all the calls on that port are cleared for a predetermined amount of time. This substitutes the value assigned to the parameter Link Hold Time with the value assigned to the parameter Idle Disconnect Time in the X.25 Port Record. The Idle Disconnect Time will then work as described in the Operators Guide. When Deactivation Mode = BUSY OUT and Link Hold Time = 0 (zero) the overall effect is the same as setting this entry to NONE.
imm	The backup link is terminated immediately when the monitored port is restored regardless of how many calls are present.
newvalNone	Same functionality as 'none.'

Hold Time
This replaces the value of the parameter Idle Disconnect Timer in the X.25 Port Record and specifies how long (in seconds) the backup link remains active after the original link is back up.

Password
The password used by the remote station to determine if dial access is authorized.

Redial Time
The time in seconds between dial attempts when bringing up a switched service call.

Redial Counter
The number of times that the Switched Service will attempt to redial when redial timer is expired. A value of `zero` will allow unlimited attempts.

Security
This specifies under what conditions the port/channel authorizes call request. Table 8 displays the security channel and descriptions:

Table 8:   Security Channels

Channel	Description
none	A call request cannot be rejected based on password of calling party id validation.
password	A call request will only be accepted if the password it provides matches the switched services password configured in the node record
callingId	A call request will only be accepted if the calling party id of the caller matches one of the entries found in the calling party id table.
both	A call request is accepted only if both the password and the calling party id are valid.
newvalNone	Same functionality as 'none.'

Call ID Statistics Table

This button accesses a view containing the call ID statistics—see *Call ID Statistics* (Page 28).

Call ID Statistics

Access: *From the Switched Service Configuration Table View, select the* ***Call ID Statistics Table*** *button.*

This view lists the Configuration calling IDs that makeup the Calling ID Table. Column headings are as follows:

Call Number
The particular calling ID Table entry being configured by the other parameters in the record.

Call String
Each calling id entry is a numeric value which may contain periods or dashes. Only calls matching these ids will be allowed when calling id security is enabled.

Backup Port Statistics Table View

Access: *From the* ***Icon Subviews*** *menu for the MotSSApp Application icon, select* ***Restoral Port Statistics.***

This view lists the statistics parameters for the Switch Service/Link Backup port, station, and channel. Column headings are as follows:

Port No.
The backup port number, used as an index to access Switched Service/LBU statistics.

Port Type
The port type of the backup port.

Conn. Type
The connection type of the backup port.

Status
The status of the backup port. Valid values are:
`down`, `up`, `activating`, `redial`, `idle`, `deactivating`, and `newvalDown`.

Reason
The reason that the backup port is active. Table 9 displays the valid reasons and descriptions:

<p align="center">**Table 9:**   Reasons</p>

Reason	Description
none	Backup port is deactivated.
call	A call request was made on the backup port.
fail	Due to a link failure on the monitored port.
remote	A call request was made to the backup port.
cto	Backup port was activated from the control terminal.
newvalNone	Same functionality as 'none'.

Redial
The number of times that the Switched Service will attempt to redial when the redial timer is expired. A value of zero will allow unlimited attempts.

LastActivate
The last time the backup port was activated.

LastDialedNo
The phone number dialed the last time the backup port was activated.

Port Statistics Table View

*Access: From the **Icon Subviews** menu for the MotSSApp Application icon, select **Link Statistics.***

This view lists the statistics parameters for the Link Backup's monitored port. The view has the following two defined areas:

- *Monitored Port* (Page 29)
- *Calling ID* (Page 30)

Monitored Port

This section displays the following information:

Index Port
The backup port number, used as a primary index to access monitored port statistics.

Monitored Port
The port being monitored by the backup port, used as a secondary index to access monitored port statistics.

Port State
State of the monitored port. Valid values are: `down`, `up`, `activating`, `redial`, `idle`, `deactivating` and `newvalDown`.

Dial No.
Phone number that the backup port will dial when a monitored port has a link failure.

Calling ID
This section displays the following information:

Call Number
The particular calling ID Table entry being configured by the other parameters in the record.

Call String
Each calling id entry is a numeric value which may contain periods or dashes. Only calls matching these ids will be allowed when calling id security is enabled.

TFTP Statistics View

Access: *From the* **Icon Subviews** *menu for the MotTFTPApp Application icon, select* **Statistics.**

This view lets you initiate and monitor TFTP file transfers to and from the modeled device. The view has the following two areas:

- *TFTP Download* (Page 30)
- *Last TFTP Transfer Status* (Page 31)

TFTP Download
This area of the TFTP Statistics view lets you define and initiate a file transfer using the following fields and buttons:

IPAddress
Enter the IP address of the remote TFTP application.

FileName
Enter the file name to be used in the TFTP RRQ or WRQ message.

Operation
The desired type of transfer.

Initiate
Initiates the transfer operation.

Last TFTP Transfer Status

This area of the TFTP Statistics view displays the following information about the last completed transfer or the transfer currently in progress:

IPAddress
The IP address of the remote TFTP application.

FileName
The file name to be used in the TFTP RRQ or WRQ message.

Operation
The type of transfer.

TimeStamp
The starting time of the transfer in progress (or the ending time of the last completed transfer) in dd-mm-yyyy hh:mm:ss format.

ByteCount
The total number of bytes transferred. This value is dynamically updated during a transfer.

Status
The current or final status of the transfer operation.

SVC Calls Table View

Access: *From the* ***Icon Subviews*** *menu for the MotVCApp Application icon, select* ***SVC Calls Table.***

This view lets you view the Switched Virtual Circuit (SVC) calls. Column headings are as follows:

Index
Position in the list of SVCs.

Calling Channel
Calling channel of the SVC.

Called Channel
Called channel of the SVC.

Rev Charge
Reverse charge facility condition. Valid values are: `refuse`, `accept`, and `newvalRefuse` (same as `refuse`).

Fast Select
Fast select facility condition. Valid values are: `noFastSelect`, `fastSelect`, and `newvalNoFastSelect` (same as `noFastSelect`).

NetUserId
Net user identification facility condition. Valid values are: `notRequested`, `requested`, and `newvalNotRequested` (same as `NotRequested`).

CUG

Closed User Group facility on/off. Valid values are: `notRequested`, `requested`, and `newvalNotRequested` (same as `notRequested`).

Conn_UpTime

Time at which the connection was up.

PVC Setup Configuration Table View

Access: *From the* *Icon Subviews* *menu for the MotVCApp Application icon, select* *PVC Setup Configuration.*

This view allows you to set-up the PVC configuration. Column headings are as follows:

Index

The particular PVC Table entry being configured by other parameters in the record.

PVC Source

The PVC source channel identifier. See Table 10 for codes and descriptions:

Table 10:   PVC Source Codes

PVC Source	Description
BCST	Route calls to the broadcast module.
MX25-2s3(2)	Route calls to MX25 port 2, station 3, channel 2.
PAD-5	Route calls to PAD port 5.
P54S9(22)	Route calls to port 54, station 9, channel 22.
SDLC-4s5	Route calls to SDLC port 4, station 5.
X25-1(5)	Route calls to X25 port 1, channel 5.

PVC Destination

The PVC destination channel identifier.

Route Selection Configuration Table View

Access: *From the* *Icon Subviews* *menu for the MotVCApp Application icon, select* *Route Selection Table.*

This view allows you to set-up the route selection configuration. Column headings are as follows:

Num

The particular Route Selection Table entry being configured.

SVC Addr

Network address for calls routed beyond this node. A route selection entry is not needed for calls destined within this node: PAD port or node resource (for example, control port) calls. The wild card (match anything) character is *, and can also be part of the entry. When set to (blank), this parameter is ignored.

Destn 1 through 8

The network address to which calls are routed.

Priority 1 through 8

The priority for call forwarding to ports within the Route Selection Table. Call forwarding is determined by a combination of priority and load conditions. 0 is the backup port. Values 1-15 are also valid, 1 being the highest priority, and 15 the lowest.

LAN Connection Configuration Table View

Access: *From the* **Icon Subviews** *menu for the MotWANApp Application icon, select* **LAN Configuration.**

This view contains the Configuration parameters for each LAN Connection. Column headings are as follows:

ConnNo

A specific LAN Connection Record within the table.

Forwarder

This parameter specifies the type of forwarders communicating over this LAN Connection.

Table 11:   Type of Forwarders

Forwarder	Description
brid	Bridging Forwarders.
rout	Routing Forwarders.
brout	Bridging and Routing Forwarders.
nc	Skipped during configuration.
newvalBrid	Same as 'brid'.

BridgeLnk

The Bridge-Link that is using this LAN Connection.

RouterIf

The Router Interface that is using this LAN Connection.

AutocallAdd
If configured, the Autocall Mnemonic references a remote address which will be called by the LAN Connection.

AutocallTime
The time interval in seconds between call attempts when auto calling.

AutocallAttempt
The number of times that the LAN Connection will attempt to autocall a remote destination. A value of zero will allow unlimited attempts.

ConnectionID
The number of the remote LAN Connection or the FRA Station number that this LAN connection will attempt to connect to if configured for autocall.

Billing
This controls whether billing (accounting) records will be created for calls on this LAN Connection. Table 12 displays the valid options and descriptions:

Table 12:   Billing

Billing	Description
off	Billing records will not be created.
on	Billing records will be created.
nc	Skipped during configuration.
newvalOff	Same functionality as "off".

TrafficPriority
The Traffic Priority of this LAN Connection. Valid values are: `low`, `med`, `high`, `exp` (Expedite Priority), `nc`, and `newvalLow` (same as `low`).

ConnQueue
The maximum number of bytes that will be queued for this LCON before transmission on the WAN link. It is recommended that this parameter be set for two seconds of data on the WAN link.

Encap
The data encapsulation type used over this LAN Connection. Valid values are: `codex`, `rfc1294`, `rfc877`, `nc`, and `newvalCodex` (same functionality as `codex`).

StartupConn
Controls whether the circuit is established at startup or established when required for data

passing. Valid values are: `disabled`, `enabled`, `nc` and `newvalDisabled` (same as `disabled`).

ConnTime
The amount of time in seconds the circuit will remain connected without passing any data before being brought down. Setting this parameter to zero keeps the circuit up indefinitely.

Conntype
Specifies whether the LAN Connection defines a point to point connection across the WAN, or is part of a group of LAN Connections. Valid options are: `ptToPt`, `group`, `nc`, and `newvalPtToPt` (same functionality as `ptToPt`).

NextHopIp
The IP address of the Router Interface on the other end of this LAN Connection, which is the next hop on the path to the final destination. A setting of 0.0.0.0 causes this parameter to be ignored.

NextHopIpx
The IPX node number of the Router on the other end of this LAN Connection, which is the next hop on the path to the final destination. A setting of `0` causes this parameter to be ignored.

MaxSVC
The maximum number of parallel connections that can be established to the remote destination. Parallel SVCs are established when congestion thresholds are reached on active connections.

Threshold
The number of outstanding data bytes that will trigger the establishment of a Parallel SVC. If this number of data bytes has been transmitted without acknowledgment, the receipt of additional data for transmission will trigger Parallel SVC establishment. Note that this parameter must be configured with a value less than the LCON Queue Limit parameter.

ParallelPort
The port that Parallel SVCs should be brought up over. The parameter can be in two forms. It can be in the form of a port identifier string. It can also be in the form of a Switched Services Table destination name, if the port that the Parallel SVCs are to come up over is a dial on demand port. A value of (blank) will cause Parallel SVCs to be brought up over the same port as the main connection.

BroadCast
This parameter specifies whether broadcast datagrams should be transmitted over this LAN connection to the remote destination. Valid values

are: `disabled`, `enabled`, `nc`, and `newvalDisabled` (same as `disabled`').

Data Summary Statistics View

Access: *From the **Icon Subviews** menu for the MotWANApp Application icon, select **DATA Statistics.***

This view provides information on data packets transmitted, received, queued and discarded. Column headings are described below.

ConnNo
A specific LAN Connection Record.

LastReset
The date and time of the last statistics reset.

AvgPktSizeTx
The average size of the packets sent on the WAN, in bytes.

PktQueued
The current number of packets queued awaiting transmission on the WAN.

MaxQueue
The maximum number of packets queued awaiting transmission on the WAN.

TimeMaxQueue
The date and time when the number of packets queued awaiting transmission on the WAN reached its maximum.

AvgPktSizeRcv
The average size of the packets received on the WAN.

PktDisDelay
The number of packets discarded due to packets exceeding the maximum allowed delay through the node.

PktDisCong
The number of packets discarded due to severe congestion.

PktDisMaxFrm
The number of packets discarded due to packets exceeding the maximum allowed frame size.

PktDisCLrReq
The number of packets discarded due to Clear Requests Received.

PktDisCallFail
The number of packets discarded due to Call Establishment Failure.

OutstandingTxBy
Count of outstanding transmit bytes.

Call Statistics

This button accesses a view containing the call statistics—see *Call Information* (Page 37).

Packet Statistics

This button accesses a view containing packet information—see *Packet Information* (Page 38).

Adaptor Control Tables

This button accesses a view for WAN adaptor controls for LAN Connection—see *Adaptor Control Table View* (Page 39).

Call Information

Access: In the Data Summary Statistics view, click the **Call Statistics** button.

This view contains a table of call statistics for individual LAN connections. Column headings are described below:

ConnNo
A specific LAN Connection Record.

ConnType
Specifies whether the connection is a Permanent Virtual Circuit (PVC) or a Switched Virtual Circuit (SVC).

Encap
This parameter specifies the data encapsulation type used over this LAN Connection. Valid values are: `codex`, `rfc1294`, `rfc877`, and `newvalCodex` (same as `codex`).

ConnStat
The current state of the PVC or a SVC. Table 13 displays the valid options and descriptions:

Table 13:   Connection States

State	Description
unconfigured	Initialization state.
backinHeap	LCONCB has been returned to memory heap.
notConnected	Completed Init, waiting for startup, or failed autocall SVC.
disabled	Connection is Disabled.
calling	Autocall SVC trying to complete call.
waitForCall	Non-autocall SVC waiting for call.
handshaking	PVC in reset handshake process.

Table 13: Connection States

State	Description
connected	Connection is established.
connectedCongested	Connection has reached congestion thresh.
wfccRecall	Wait for Clr Conf Re-Call, autocall SVC.
wfccWaitForCall	Wait for Clr Conf Wait for Call non-auto calling SVC.
wfccDisabled	Wait for Clr Conf go to Disabled.
newvalUnconfigured	Same functionality as `unconfigured.`

Forwarder
Specifies which forwarders are currently connected to this LAN Connection.

RemoteAddr
Specifies the called address of the remote WAN Adaptor LAN Connection for connected SVCs.

CallAttempt
Specifies the number of times autocall was attempted before either succeeding or failing in establishing the connection.

CauseCode
The cause code in the call clear packet last received by the LAN connection and explains why the last call was cleared.

DiagCode
The diagnostic code in the call clear packet last received by the LAN connection and explains why the last call was cleared.

SVCEstab
Count of parallel SVCs with calls established.

MaxSVCNo
Number of Parallel SVCs.

Packet Information

Access: *In the Data Summary Statistics view, click the* ***Packet Statistics*** *button.*

This view contains a table of packet statistics for LAN Connections. Column headings are described below:

ConnNo
A specific LAN Connection Record.

DataTx
The total number of Data Packets sent on the WAN.

DataRcv
The total number of Data Packets received from the WAN.

CallReqTx
The total number of Call Request Packets sent on the WAN.

CallReqRcv
The total number of Call Request Packets received from the WAN.

CallAcceptT
The total number of Call Accept Packets sent on the WAN.

CallAcceptR
The total number of Call Accept Packets received from the WAN.

ClearReqTx
The total number of Clear Request Packets sent on the WAN.

ClearReqRc
The total number of Clear Request Packets received from the WAN.

ClearConfTx
The total number of Clear Confirm Packets sent on the WAN.

ClearConfRcv
The total number of Clear Confirm Packets received from the WAN.

ResetReqTx
The total number of Reset Request Packets sent on the WAN.

ResetReqRcv
The total number of Reset Request Packets received from the WAN.

ResetConfTx
The total number of Reset Confirm Packets sent on the WAN.

ResetConfRcv
The total number of Reset Confirm Packets received from the WAN.

Adaptor Control Table View

Access: *In the Data Summary Statistics view, click the* ***Adaptor Control Tables*** *button.*

This view contains the Wan Adaptor control tables for LAN Connection. Column headings are described below:

LanConnN
A specific LAN Connection Record.

LanConn

This command enables or disables a specified LAN connection. Valid values are: `enable`, `disable`, `newvalEnable` (same functionality as 'enable').

ConnBoot

Writing to this causes the LAN connection record to be booted.

ResetStat

When this command is entered, the resettable statistics parameters are reset for the specified LAN Connection Number.

Motorola LAN Applications (MotLANApps)

This major application (model type MotLANApps) has two minor applications (model types MotBridgeApp and MotRouterApp). The Icon Subviews menus associated with these applications provide access to the following application-specific views:

- MotBridgeApp
  - *Bridge Statistics View* (Page 40)
  - *Bridge Configuration Information View* (Page 54)

- MotRouterApp
  - *ARP Cache Table View* (Page 50)
  - *IP Access Control Table View* (Page 51)
  - *IP Interface Table View* (Page 52)
  - *Static Routes Info View* (Page 62)
  - *IP Interchange Table View* (Page 64)
  - *Filter/Gateway/Priority Info View* (Page 65)
  - *IP BOOTP Server Info View* (Page 67)

Bridge Statistics View

Access: From the **Icon Subviews** menu for the MotBridgeApp Application icon, select **Bridge Statistics.**

In addition to providing button access to a number of subviews, the Bridge Statistics view contains the following three areas:

- *Port Stats* (Page 40)
- *Link Stats* (Page 41)
- *Base Port Stats Table* (Page 41)

Port Stats

This area of the Bridge Statistics view displays the following totals for all ports associated with the device's transparent bridging function:

- The number of end station addresses learned.
- The number of available entries in the Forwarding Table.

- The maximum number of entries being used in the Forwarding Table since the last node boot.

Link Stats

This area of the Bridge Statistics view displays the total number of WAN Bridge Links that have been configured.

Base Port Stats Table

This area of the Bridge Statistics view identifies the current Link Status and time of the last LAN port statistics reset for each port associated with the transparent, source-route, or srt bridging functions of this device. See Table 14 for expanded descriptions of possible Link Status values:

Table 14:   Link Status Descriptions

Status	Description
unconfig	Not configured.
configerr	Configuration error on link.
swDisabled	Physical errors on link.
userDisabled	User shut down link.
congested	WAN congested condition.

Table 14:   Link Status Descriptions

Status	Description
inactive	Configured link - ready for use but not active.
active	Configured and active.

The following eight buttons are located at the bottom of the Bridge Statistics view:

Transparent Bridge Link Stats

This button accesses a table providing statistical information for each bridge link associated with the device's transparent bridging function—see *Transparent Bridge Link Stats Table View* (Page 42).

Transparent Bridge Port Stats

This button accesses a table providing statistical information for each port associated with the device's transparent bridging function—see *Transparent Bridge Port Stats Table View* (Page 44).

Spanning Tree Bridge Link Stats

This button accesses a table containing bridge-Link-specific information for the Spanning Tree

Protocol—see *Spanning Tree Bridge Link Stats Table View* (Page 45).

SRB Port Statistics

This button accesses a table providing statistical information for each port associated with the device's source route bridging function—see *SRB Port Statistics Table View* (Page 46).

SRB WAN Bridge Link Stats

This button accesses a table providing statistical information for each WAN Bridge Link associated with the device's source route bridging function— see *SRB WAN Bridge Link Stats View* (Page 46).

MAC Addr and Protocol Filtering

This button accesses a table providing MAC address and protocol filtering information broken down by port—see *MAC Address & Protocol Filtering Stats Table View* (Page 48).

WAN Bridge Links Stats

This button accesses a table providing statistical information for each of the device's WAN Bridge Links—see *WAN Bridge Link Stats Table View* (Page 49).

Local Termination Stats

This button accesses a table providing traffic statistics broken down by frame type for Local Termination sessions—see *Local Termination Stats Table View* (Page 49).

Transparent Bridge Link Stats Table View

Access: *In the Bridge Statistics view, click the **Transparent Bridge Link Stats** button.*

This view contains a table providing statistical information for each bridge link associated with the device's transparent bridging function. Column headings are as follows:

LinkNo
Number identifying a particular bridge link.

MaxInfo
The maximum size of the INFO (non-MAC) field that this port will receive or transmit.

InFrames
The number of frames that have been received by this bridge link from its segment. Note that a frame received on the interface corresponding to this bridge link is only counted by this field if it is

for a protocol being processed by the local bridging function.

OutFrames
The number of frames that have been transmitted by this bridge link to its segment. Note that a frame transmitted on the interface corresponding to this bridge link is only counted by this field if it is for a protocol being processed by the local bridging function.

Discards
Count of valid frames received that were discarded (i.e., filtered) by the Forwarding Process.

UnicastRx
The number of Unicast Frames received on this WAN Bridge Link.

UnicastTx
The number of Unicast Frames transmitted on this WAN Bridge Link.

MulticastRx
The number of Multicast Frames received on this WAN Bridge Link.

MulticastTx
The number of Multicast Frames transmitted on this WAN Bridge Link.

BroadcastRx
The number of Broadcast Frames received on this WAN Bridge Link.

BroadcastTx
The number of Broadcast Frames transmitted on this WAN Bridge Link.

InBoundDisc
The number of frames discarded due to receive Link State not being set to "forwarding."

OutBoundDisc
The number of frames discarded due to transmit Link State not being set to "forwarding."

ULPInBoundDisc
The number of frames discarded due to "Unicast Link Protect" being set on the incoming link.

ULPOutBoundDisc
The number of frames discarded due to "Unicast Link Protect" being set on the outgoing link.

MLPInBoundDisc
The number of frames discarded due to "Multicast Link Protect" being set on the incoming link.

MLPOutBoundDisc
The number of frames discarded due to "Multicast Link Protect" being set on the outgoing link.

Transparent Bridge Port Stats Table View

Access: *In the Bridge Statistics view, click the **Transparent Bridge Port Stats** button.*

This view contains a table providing statistical information for each port associated with this device's transparent bridging function. Column headings are as follows:

PortNo
Number identifying a particular port.

UnicastRx
The number of Unicast Frames received on this LAN link.

UnicastTx
The number of Unicast Frames transmitted on this LAN link.

MulticastRx
The number of Multicast Frames received on this LAN link.

MulticastTx
The number of Multicast Frames transmitted on this LAN link.

BroadcastRx
The number of Broadcast Frames received on this LAN link.

BroadcastTx
The number of Broadcast Frames transmitted on this LAN link.

InboundDisc
The number of frames discarded due to "Receive Link State" not being set to "forwarding."

OutboundDisc
The number of frames discarded due to "Receive Link State" not being set to "forwarding."

ULPInboundDisc
The number of frames discarded due to "Unicast Link Protect" being set on the incoming link.

ULPOutboundDisc
The number of frames discarded due to "Unicast Link Protect" being set on the outgoing link.

MLPInBoundDisc
The number of frames discarded due to "Multicast Link Protect" being set on the incoming link.

MLPOutBoundDisc
The number of frames discarded due to "Multicast Link Protect" being set on the outgoing link.

Spanning Tree Bridge Link Stats Table View

Access: *In the Bridge Statistics view, click the **Spanning Tree Bridge Link Stats** button.*

This view contains a table providing statistical information for individual Spanning Tree bridge links. Column headings are as follows:

LinkNo
Number identifying a particular bridge link.

Priority
Port priority value (as derived from second octet of Port ID object).

LinkState
The bridge link's current state as defined by application of the Spanning Tree Protocol. When **LinkStatus** is "disabled," the Link State value is also "disabled." When **LinkStatus** is "enabled," the Link State value determines what action a bridge link takes upon receiving a frame. Possible values are: `blocking`, `listening`, `learning`, `forwarding`, and `broken`.

LinkStatus
The status of the bridge link. Valid values are: `enable`, or `disable`.

PathCost
The contribution of this bridge link to the path cost towards the spanning tree root that includes this bridge link.

DesignatedRoot
The unique Bridge Identifier of the Bridge recorded as the Root in the Configuration BPDUs transmitted by the Designated Bridge for the segment to which the bridge link is attached.

DesignatedCost
The path cost of the Designated Port of the segment connected to this bridge link.

DesignatedBridge
The Bridge Identifier of the bridge which this bridge link considers to be the Designated Bridge for this bridge link's segment.

DesignatedPort
The Port Identifier of the bridge link on the Designated Bridge for this bridge link's segment.

FwdTransition
The number of times this port has transitioned from the "Learning" state to the "Forwarding" state.

SRB Port Statistics Table View

Access: *In the Bridge Statistics view, click the **SRB Port Statistics** button.*

This view contains a table providing statistical information for each port associated with the device's source route bridging function. Column headings are as follows:

Port Index
The Bridge Identifier of the bridge which this bridge link considers to be the Designated Bridge for this bridge link's segment.

FramesRx
The Port Identifier of the bridge link on the Designated Bridge for this bridge link's segment.

FramesTx
The number of times this port has transitioned from the "Learning" state to the "Forwarding" state.

RingNo.
The number of times this port has transitioned from the "Learning" state to the "Forwarding" state.

SRB WAN Bridge Link Stats View

Access: *In the Bridge Statistics view, click the **SRB WAN Bridge Link Stats** button.*

This view contains a table that provides statistical information about every WAN Bridge Link associated with this source route bridge. Column headings are as follows:

LinkNo
Identifies a particular WAN bridge link.

STESpanMode
Indicates how the link port deals with Spanning Tree Explorer (STE) frames. Table 15 displays possible values and descriptions:

Table 15:   Spanning Modes

Spanning Mode	Description
disabled	The port will not accept or send STE frames; any STE frames received will be discarded.
forced	Indicates the port will always accept and propagate STE frames. This allows a Spanning Tree to be manually configured for this class of packet. Unlike transparent bridging, this is not catastrophic to the network if there are loops.
auto-span	Indicates that the bridge implements the Spanning Tree Protocol and has it enabled on this port. However, handling of STE frames still depends on the Link State setting. If the port is in the "forwarding" state, the frame will be accepted or propagated. Otherwise it will be discarded.

SpecInFrms
The number of specifically routed frames that have been received from this bridge link's segment.

SpecOutFrms
The number of specifically routed frames that this bridge link has transmitted on its segment.

APEInFrms
The number of All Paths Explorer (APE) frames that have been received by this bridge link from its segment.

APEOutFrms
The number of APE frames that have been transmitted by this bridge link on its segment.

STEOutFrms
The number of Spanning Tree Explorer (STE) frames that have been transmitted by this bridge link on its segment.

STEInFrms
The number of STE frames that have been received by this bridge link on its segment.

SegMisDisc
The number of explorer frames that have been discarded by this bridge link because the routing descriptor field contained an invalid adjacent segment value.

DupSegDisc
The number of frames that have been discarded by this bridge link because the routing descriptor field contained a duplicate segment identifier.

HopCountExcDisc
The number of explorer frames that have been discarded by this bridge link because the Routing

Information Field has exceeded the maximum route descriptor length.

TotFrmsRx
The sum of ARE, STE and SRF frames received on this bridge link.

TotFrmsTx
The sum of ARE, STE and SRF frames transmitted on this bridge link.

NextRingNo
The Next Ring number of the WAN bridge link to which the bridge route is bridging. This is the ring number to which the Codex remote bridge half is attached.

MAC Address & Protocol Filtering Stats Table View

Access: *In the Bridge Statistics view, click the* **MAC Addr & Protocol Filtering** *button.*

This view contains a table that provides MAC address and protocol filtering information on a port-by-port basis. Column headings are as follows:

Port No
Number identifying a particular port.

SrcAddrFiltIn
The number of inbound frames on this port that were not forwarded because of Source MAC Address filtering.

SrcAddrFiltOut
The number of outbound frames on this port that were not forwarded because of Source MAC Address filtering.

DestAddrFiltIn
The number of inbound frames on this port that were not forwarded because of Destination MAC Address filtering.

DestAddrFiltOut
The number of outbound frames on this port that were not forwarded because of Destination MAC Address filtering.

ProtFiltIn
The number of inbound frames on this port that were not forwarded because of Protocol filtering.

ProtFiltOut
The number of outbound frames on this port that were not forwarded because of Protocol filtering.

TotFiltIn
The sum of Source MAC Address, Destination MAC Address, and Protocol inbound frames on this port not forwarded because of filtering.

TotFiltOut
The sum of Source MAC Address, Destination MAC Address, and Protocol outbound frames on this port not forwarded because of filtering.

WAN Bridge Link Stats Table View

Access: *In the Bridge Statistics view, click the **WAN Bridge Links Stats** button.*

This view contains a table that provides statistical information for each of the device's WAN Bridge Links. Column headings are as follows:

LinkNo
Number identifying a particular WAN Bridge Link.

IFIndex
The index number of the interface corresponding to this WAN Bridge Link.

LinkCkt
A unique value distinguishing a WAN Bridge Link from others on the same bridge that might share the same **IFIndex**. For example, in the case where multiple ports correspond one-to-one with multiple X.25 virtual circuits, this value might identify an (e.g., the first) object instance associated with the X.25 virtual circuit corresponding to this port.

LinkStatus
Current status of the WAN Bridge Link. Possible values are listed in Table 14, *Link Status Descriptions*, on Page 41.

LastStatReset
The time of the last LAN port statistics reset.

Local Termination Stats Table View

Access: *In the Bridge Statistics view, click the **Local Termination Stats** button.*

This view contains a table of Local Termination session statistics. Column headings are as follows:

Index
Number (1-64) identifying a particular session.

DataCharIn
The number of data bytes received.

DataCharOut
The number of data bytes transmitted.

DataFrIn
The number of data frames received.

DataFrOut
The number of data frames transmitted.

FrRrIn
The number of Receiver Ready frames received.

FrRrOut
The number of Receiver Ready frames transmitted.

FrRnrIn
The number of Receiver Not Ready frames received.

FrRnrOut
The number of Receiver Not Ready frames transmitted.

FrXidIn
The number of ID Exchange frames received.

FrXidOut
The number of ID Exchange frames transmitted.

FrRejIn
The number of Reject frames received.

FrRejOut
The number of Reject frames transmitted.

FrSabmeIn
The number of SABME frames received.

FrSabmeOut
The number of SABME frames transmitted.

TotFrInData
The sum of Data Frames, Receiver Ready, Receiver Not Ready, Reject, SABME and ID Exchange frames received.

TotFrOutData
The sum of Data Frames, Receiver Ready, Receiver Not Ready, Reject, SABME and ID Exchange frames transmitted.

StatsBoot
This command is used to boot a Local Termination session when set to "Boot."

ARP Cache Table View

Access: *From the* *Icon Subviews* *menu for the MotRouterApp Application icon, select* *ARP Cache.*

This view contains a table of Address Resolution Protocol configuration information. Column headings are as follows:

TableIndex
Number (1-256) identifying a particular table entry.

InterfaceNo.
Number (1-36) identifying a particular router Interface Number as assigned in the Interface Configuration Table.

ProtocolType
Identifies the type of routing protocol in effect for this interface.

IPAddr

The IP address of a particular node on the network attached to the indicated interface.

MacAddr

The hardware MAC address of the node with the indicated IP address.

IP Access Control Table View

Access: *From the **Icon Subviews** menu for the MotRouterApp Application icon, select **IP Access Control Table.***

This view contains a table of IP Access Control information. Column headings are as follows:

TableIndex

Number (1-256) identifying a particular table entry.

AccessType

Each received IP packet is compared with all Access Control list entries in order of TableIndex number. If the value of the first matching entry is included, the packet is forwarded. If the value is excluded, or if no matching entry is found, the packet is dropped. An entry matches a packet when the source IP address, destination IP address, IP Protocol number range, and TCP/UDP port number range all match the packet.

SourceAddr

IP source address to compare against a received packet's source IP address field. Matches are determined in conjunction with **SourceAddMask**.

SourceAddrMask

This value is logically AND-ed with **SourceAddr** and compared with the Source Address of a received packet. For example, a mask of 255.0.0.0 with a result of 129.0.0.0 will match any address with 129 in the first byte. A mask of 255.255.255.255 with a result of 129.122.3.26 matches only the IP host 129.122.3.26. A mask of 0.0.0.0 with a result of 0.0.0.0 is a wild card, and matches any IP address.

DestAddr

IP destination address to compare against a received packet's source IP address field. Matches are determined in conjunction with **DestAddMask**.

DestAddrMask

This value is logically AND-ed with **SourceAddr** and compared with the **DestAddr** of a received packet. For example, a mask of 255.0.0.0 with a result of 129.0.0.0 will match any address with 129 in the first byte. A mask of 255.255.255.255 with a result of 129.122.3.26 matches only the IP host 129.122.3.26. A mask of 0.0.0.0 with a

result of 0.0.0.0 is a wild card, and matches any IP address.

FirstProtocol/LastProtocol

A received packet's IP protocol byte must fall within the range described by these two column entries in order to be considered a match. The FirstProtocol value must be less than or equal to the Last Protocol field value. A First Protocol of 0 and a Last Protocol of 255 will match all IP packets. Commonly used IP protocol numbers are 1 for ICMP, 6 for TCP, 8 for EGP, 17 for UDP and 89 for OSPF.

FirstPort/LastPort

A received packet's UDP or TCP port number must fall within the range described by these two column entries in order to be considered a match. An entry with a First Port value of 0 and a Last Port value of 65535 will match all packets. Commonly used port numbers are 21 for FTP, 23 for Telnet, 25 for SMTP, 513 for rlogin, 520 for RIP (Routing Information Protocol), and 600 for X.

IP Interface Table View

Access: From the **Icon Subviews** menu for the MotRouterApp Application icon, select **IP Interface Table.**

This view contains a table of IP router interface information. Column headings are described below. Heading names prefixed by "Advt" are contained in a subview accessed via the **Advertise Routes** button at the bottom of this view.

TableIndex

Identifies the type of routing protocol in effect for this interface.

I/FNo.

Number identifying a particular routing interface. Number 1 is for the LAN port. Numbers 5 through 36 are reserved for Lan connections, which are virtual circuit links over WAN networks such as X.25 or Frame Relay to other routers.

IPAddr

The 32-bit IP host address of the router on the associated interface.

AddrMask

This parameter is entered in dotted notation and configures the 32-bit IP Subnetwork Address Mask associated with network to which the interfaces attaches. The subnetwork address mask has 1 bit for the bits which form the network and subnetwork portions of the IP

address. For example, if the interface is on a class B network such as 128.185.0.0, and the third byte is used to select a subnet (such as 128.185.100.0), the mask should be set to 255.255.255.0. All IP devices on a subnetted network must be configured with the same subnetwork address mask.

OverrideDefRte
When set to `enabled`, this parameter allows the router to override the configured Default Gateway when it receives a RIP update from another router advertising the default route of 0.0.0.0 with a cheaper metric.

OverrideStaticRte
When set to `enabled`, this parameter allows the router to override statically configured routing information with less costly RIP information received on this interface.

LearnNetworkRte
This setting enables/disables the learning of new network-level routes received from neighboring routers on this interface's network.

LearnSubnetRte
This setting enables/disables the learning of new subnet-level routes received from neighboring routers on this interface's network.

AcceptRIP.
This setting enables/disables the processing of RIP updates received on this interface.

ASNo.
The Autonomous System (AS) number to be used as a tag for RIP information received on this interface. Tags are used to group routes together for later readvertisement via EGP, where the tag is treated as if it were a route's source Autonomous System. Tags are also propagated by the OSPF routing protocol.

BcastStyle
Specifies the convention for addressing IP broadcasts to all other hosts on the attached network. If style value is `local`, the Broadcast Fill Pattern (BcastFillPattern, described below) fills all 32 bits of the IP broadcast address. If the Stle value is `network`, the network and subnetwork portions of the IP broadcast address is set to the interface's network number, and the Broadcast Fill pattern fills only the host portion. Examples: "local" 1-fill = 255.255.255.255; "local" 0-fill = 0.0.0.0; "network"1-fill = 128.185.255.255; "network" 0-fill =128.185.0.0. All IP devices on a network must be configured with the same IP broadcast address convention.

BcastFillPattern

Specifies the IP broadcast fill pattern (either ones or zeroes) that the router will use when broadcasting on this interface.

MTUsize

Specifies the Maximum Transmission Unit to be used.

RIPSplitHorizon

Enables/disables the IP RIP split horizon.

RIFfield

Enables/disables the IP use of a RIF field in Token Ring networks for ARPs and RIPs.

Advertise Routes

This button accesses a table providing advertise routes —see *Advertise Routes* (Page 54).

Advertise Routes

Access: From the IP Interface Table view, click the **Advertise Routes** button.

Column headings are as follows:

AdvtDefRte

Enables/disables advertising the default route of 0.0.0.0 on this interface.

AdvtNetworkRte

Enables/disables advertising directly-attached networks and learned IP network routes on RIP updates transmitted on this interface.

AdvtSubnetRte

Enables/disables the inclusion of all subnet routes within RIP updates sent on this interface.

AdvtStatic/DirectRte

Enables/disables the inclusion of all statically configured and directly connected routes within RIP updates sent on this interface.

Bridge Configuration Information View

Access: From the **Icon Subviews** menu for the MotBridgeApp Application icon, select **Bridge Configuration.**

In addition to providing button access to a number of subviews, the Bridge Configuration Information view contains the following three defined areas:

- *Base Port Info* (Page 55)
- *STP Port Info* (Page 55)
- *Base Port Configurables* (Page 55)

Base Port Info

This area of the Bridge Configuration Information view includes the following user-configurable settings:

Wan Data Priority
This menu button lets you set the transmission priority for bridged data over the WAN as low, medium, or high.

Learn Period (Sec)
The time, in seconds, that a bridge will be prevented from forwarding frames after the forwarding is cleared due to node boot.

Bridged Protocols
This menu button lets you specify the routable protocols that are allowed to be bridged. Valid values are: IP, IPX, IPIPX, or None.

Virtual Ring Number
Number identifying a virtual ring (used to support the LSS in its path trace function and in IP tunneling for Token Ring networks.)

Max Bridge Links
The maximum number of bridge links that will be allowed.

STP Port Info

This area of the Bridge Configuration Information view displays the following settings:

Stp Control
Auto indicates that the bridge participates in STP and automatically calculates the STE (Single Route Broadcast) frame path. Man indicates the spanning tree is manually configured via the Configure Bridge Link parameter.

Bad Hello Threshold
If the **Stp Control** value described above is set to Man, an event (report) is generated when the number of Bad Hellos exceeds this value.

Bad Hello Timeout
The amount of time in minutes between Bad Hello counter resets.

Base Port Configurables

This area of the Bridge Configuration Information view is a table of user-configurable settings for each port associated with the device's bridging functions. Column headings are as follows:

BaseIndex
Number identifying a particular port.

AddFiltAction

Determines whether the link will `pass` or `block` frames with a MAC address that are not listed in the MAC Address Filter Table. A setting of `none` indicates no MAC address filtering will be performed for this link.

PortFiltAction

Determines whether the link will `pass` or `block` frames with a Protocol value that are not listed in the Protocol Filter Table. A setting of `none` indicates no MAC address filtering will be performed for this link.

StpState

Determines whether to `forward` or `block` an STE (or Single Route Broadcast) frame when **Stp Control** is set to `Man`.

The following six buttons are located at the bottom of the Bridge Configuration Information view.

Local Termination Config

This button accesses a table providing traffic statistics broken down by frame type for Local Termination sessions—see *Local Termination Table View* (Page 57).

MAC Address Filtering

This button accesses a table providing traffic statistics broken down by frame type for Local Termination sessions—see *Filtering Information View* (Page 58).

WAN Bridge/Link Info

This button accesses a table providing traffic statistics broken down by frame type for Local Termination sessions—see *WAN Bridge Link Info View* (Page 59).

Permanent Address Table

This button accesses a table providing traffic statistics broken down by frame type for Local Termination sessions—see *Address Table Parameters View* (Page 60).

802.1d Static Link Table

This button accesses a table providing traffic statistics broken down by frame type for Local

Termination sessions—see *802.1d Static Link Table View* (Page 61).

SRB Wan Bridge Links

This button accesses a table providing traffic statistics broken down by frame type for Local Termination sessions—see *SRB WAN Bridge Link Table View* (Page 62).

Local Termination Table View

Access: *In the Bridge Configuration Information view, click the **Local Termination Config** button.*

This view contains two tables of local termination information. The upper table lists up to 64 stations. Column headings are as follows:

StnNumber
Number (1-64) identifying a particular station.

MacAddr
The MAC address of the station; this value must match the source MAC address of the frame received from the LAN port or the destination MAC address of a frame received from the WAN for the session to be spoofed.

SAP
The SAP (Service Access Point) of the station. This value must match the source SAP of the frame received from the LAN port or destination SAP of a frame received from the WAN for the session to be spoofed.

ProfileName
The name of the local termination profile configured for this station (see **LIcName** below). This name is used to obtain the associated timeout and count values.

The lower table defines up to 8 local termination profiles that may apply to link stations listed in the upper table. Column headings are as follows:

Number
Number (1-8) identifying a particular local termination profile.

LIcName
The name of the local termination profile configured for this station (see **ProfileName** above). This name is used to obtain the associated time-out and count values.

AckTimer
The length of time in seconds after which the link station will determine that a remote station has failed to acknowledge an outstanding I frame or supervisory frame with poll bit set to 1.

RcvAckTimer

The length of time in tenths of seconds that the link station will wait to acknowledgment a frame from a remote station. (This is a method of reducing the amount of acknowledgments generated by a link station.)

IdleTime

The length of time, in tenths of seconds, that the station will wait after detecting an idle link (no data to pass and no outstanding acknowledgments) before sending a supervisory frame with the poll bit set to 1.

ProfN2

The number of times an I frame or supervisory frame with poll bit set to 1 will be transmitted due to acknowledgment time-out, before the logical link will be declared down (inoperative).

ProfN3

The number of times an I frame or supervisory frame with poll bit set to 1 will be transmitted due to acknowledgment time-out, before the logical link will be declared down (inoperative).

TxWindSize

The maximum number of I frames a station may transmit without acknowledgment.

Filtering Information View

Access: In the Bridge Configuration Information view, click the **MAC Address Filtering** button.

This view contains the following two tables:

MAC Address Filter Table

This table appears in the upper half of the Filtering Information view. For each of up to 300 MAC address entries, there are four "action" columns and four "list" columns. The "action" columns display the filtering action (see Table 16) that will be taken depending on whether the address is the source of an incoming frame (**InSrcLkAct**), the source of an outgoing frame (**OutSrcLkAct**), the destination for an incoming frame (**IncDestLkAct**), or the destination for an outgoing frame (**OutDestLkAct**). In cases where the filtering action is PASSLIST or BLOCKLIST, the associated "list" column (**InSrcLkList**, **OutSrcLkList**, **OutDestList**, or **OutDestList**) identifies the individual links that will pass or block frames in that category. Links are specified by number and may contain a range (e.g., "1, 3, 4, 7-10" means links 1,3,4,7,8,9, and 10).

Table 16:   Filtering Action Descriptions

Action	Description
PASS	All links will pass frames with the indicated MAC address.
BLOCK	All links will block frames with the indicated MAC address.
PASSLIST	Only links on the associated list will pass frames with this MAC address.
BLOCKLIST	Only links on the associated list will block frames with this MAC address.

Protocol Filter Table

This table appears in the lower half of the Filtering Information view and is set up similarly to the MAC Address Filter table in the same view. For each of up to 100 protocol type/value entries, there are two "action" columns (**IncProtLkAct** and **OutProtLkAct**) and two "list" columns (**IncProtList** and **OutProtList**). Possible values for the "action" columns are the same as listed in Table 16. When the filtering action is PASSLIST or BLOCKLIST, the associated "list" column identifies the individual links that will pass or block all frames with the specified protocol type and value.

WAN Bridge Link Info View

Access: *In the Bridge Configuration Information view, click the **WAN Bridge/Link Info** button.*

The top upper right portion of this view lists the following link station configuration settings that apply to all bridge links:

Acknowledge Timer
The length of time, in seconds, after which the link station will determine a remote station has failed to acknowledge an outstanding I frame or supervisory frame with poll bit set to 1.

Receive Ack Timer
The length of time, in tenths of seconds, that the link station will wait to acknowledgment a frame from a remote station. (This is a method of reducing the amount of acknowledgments generated by a link station.)

IDLE Timer
The length of time, in tenths of seconds, that the link station will wait after detecting an idle link (no data to pass and no outstanding acknowledgments) before sending a supervisory frame with the poll bit set to 1.

Transmit Ack Count
The number of times an I frame or supervisory frame with poll bit set to 1 will be transmitted due

to acknowledgment time-out, before the logical link will be declared down (inoperative).

Receive Ack Count
The number of frames the link station will receive from the remote station before acknowledging receipt.

Tx Window Size
The maximum number of I frames a station may transmit without acknowledgment.

Tx Data Priority
The transmission priority of the LLC LT data over WAN.

The bottom portion of the WAN Bridge Link Info view is the 802.1d Base Link Group table, which lists settings for individual bridge links. Column headings are as follows:

LnkIndex
Number (5-36) identifying a particular WAN bridge link.

LnkType
Identifies the type of bridging employed on this link.

AddrFiltAction
Determines whether the link will `pass` or `block` frames with a MAC address that are not listed in the MAC Address Filter Table. A setting of "none"

indicates no MAC address filtering will be performed for this link.

ProtFiltAction
Determines whether the link will `pass` or `block` frames with a Protocol value that are not listed in the Protocol Filter Table. A setting of `none` indicates no MAC address filtering will be performed for this link.

LnkManState
Determines whether to `forward` or `block` an STE (or Single Route Broadcast) frame when the Stp Control parameter is set to `Man`.

Address Table Parameters View

Access: *In the Bridge Configuration Information view, click the* ***Permanent Address Table*** *button.*

This view contains a table with entries for up to 8000 permanent MAC addresses that are loaded into the Forwarding Table after a table or node boot. Each entry identifies the bridge link (**LinkNum**) to which frames with the given MAC address will be forwarded.

802.1d Static Link Table View

*Access: In the Bridge Configuration Information view, click the **802.1d Static Link Table** button.*

This view contains a table of filtering information configured into the bridge by local or network management specifying the set of WAN bridge links to which frames received from a specific bridge link and containing a specific destination address are allowed to be forwarded. Column headings are as follows:

DestMACAddr
The destination MAC address in a frame to which this entry's filtering information applies. This field can take the value of a unicast address, a group address, or the broadcast address.

RxPort
The number of the WAN bridge link from which a frame must be received in order for this entry's filtering information to apply. A value of zero indicates that this entry applies on all of the device's bridge links for which there is no other applicable entry.

FwdFrmToLnk
The set of WAN bridge links to which frames received from the specified port and destined for the specified MAC address can be forwarded.

EntryStatus
The current status of the entry. See Table 17 for expanded descriptions of possible status values.

Table 17: Entry Status Descriptions

Status	Description
other	Entry is currently in use, but the conditions under which it will remain so are different from each of the following status values.
invalid	Entries will be removed from table if this value is written to the corresponding field.
permanent	Entry is currently in use and will remain so after the next reset of the bridge.
deleteOnReset	Entry is currently in use and will remain so until the next reset of the bridge.
deleteOnTimeout	Entry is currently in use and will remain so until it is aged out.

SRB WAN Bridge Link Table View

Access: *In the Bridge Configuration Information view, click the **SRB Wan Bridge Links** button.*

This table contains configuration information about each WAN bridge link that is associated with the device's source route bridging function. Column headings are as follows:

LinkNo
Number identifying a particular WAN bridge link.

HopCount
The maximum number of routing descriptors allowed in an All Paths or Spanning Tree Explorer frame.

BridgeNo
Number (0-15) uniquely identifying a particular bridge when more than one bridge is used to span the same two segments. A value of 65535 signifies that no bridge number is assigned to this bridge.

TargetSeg
Number (0-4095) identifying the target segment this link port is considered to be connected to by the bridge. A value of 65535 signifies that no target segment is assigned to this port.

LargestFrame
The maximum size of the INFO field (LLC and above) that this port can send/receive.

Static Routes Info View

Access: *From the **Icon Subviews** menu for the MotRouterApp Application icon, select **Routing Information.***

This view contains the following three areas:

- *Static Route Table* (Page 62)
- *Dynamic Route Table* (Page 63)
- *RIP Information* (Page 63)

Static Route Table

This area of the Static Routes Info view provides configuration information about static routes known to the device's routing function. Column headings are as follows:

Index
Value identifying a particular table entry.

IpNetwork
The IP address of a destination network or sub-network (Host addresses are not included in the route table).

IpMask
The mask associated with the IP Network/Subnet address. For example: if the destination is a subnet of a class B network and the third byte of the IP address is used as the subnet portion, the address mask would be set to 255.255.255.0.

NextHop
The IP address of the next hop to the destination. The next hop itself must be on an IP network directly connected to the router.

Metrics
Enables/disables the inclusion of all subnet routes within RIP updates sent on this interface.

Dynamic Route Table

This area of the Static Routes Info view lists IP addresses of destination networks/subnetworks for dynamic routes. Host addresses are not included.

RIP Information

This area of the Static Routes Info view displays the following RIP configuration settings:

RIP Status
Indicates whether RIP processing is globally enabled/disabled for the router.

Directed Broadcast
Indicates whether forwarding of IP packets whose destination is a non-local (remote LAN) broadcast address is enabled/disabled.

IP Access Control
Globally enables/ disables operation of the IP Access Control table for this router.

Internal NetMask
This IP Address overrides the Router ID to become the default IP address for the router. The default IP address is used as the IP source address of PING and ICMP frames originated from the router. IP address is reported in SNMP trap frames. If both Router ID and this internal IP address are left undefined (as 0.0.0.0), the default IP address is the IP address of the lowest numbered operational interface of the router.

Route Cache Size
The maximum number of entries that may be stored in the IP route cache. The IP route cache holds the destination addresses of recently received packets and for each entry maintains a count of packets forwarded to that destination.

Originate Default Route
Indicates whether origination and RIP advertisement of the default IP route 0.0.0.0. are enabled/disabled for the router. Default route advertisements must also be explicitly enabled for each interface. The router will originate the default route only when it has EGP-derived or external OSPF routes in its routing table.

Reassembly Buffer Size
The size (in bytes) of the IP fragment reassembly buffers. The setting must be greater than the size

of the largest IP packet to be transmitted on the organization's network.

Routing Table Size
The maximum number of routes that may be stored in the IP routing table.

Default Gateway
The IP address of the default gateway this router will use when a packet's destination route is otherwise unknown. The next hop must be to a router on a directly attached network.

Default Gateway Metric
The cost metric for a transmission to this router's default gateway, usually given as the number of network hops.

Default IPAddress
Unless overridden by the **Internal NetMask**, the Router ID is used as the default IP address of the router. This is the principal management address of the router, and is the IP source address of SNMP Trap, PING and other ICMP frames originated from the router. If both the Router ID and **Internal NetMask** are left undefined (as 0.0.0.0), the default IP address is the IP address of the lowest numbered operational interface of the router.

Advertised Default Hops
The cost metric (usually the number of hops) that RIP will advertise for the default route of 0.0.0.0. A metric of 16 advertises that the default route is unreachable.

IP Interchange Table View

Access: *From the **Icon Subviews** menu for the MotRouterApp Application icon, select **IP Interchange Table.***

This view contains the following two tables on routing interchange information:

- *Output Table* (Page 64)
- *Input Table* (Page 65)

Output Table
This area of the IP Interchange Table view has the following column headings:

Index
Number identifying a particular output route.

NeighAS
The AS number assigned to an EGP neighbor. If nonzero, the value must match a Neighboring AS number entered in the IP EGP AS Information Table. A value of 0 adds the route to the default Output Exchange Table, which is reported to all

new EGP neighbors learned and not otherwise entered in the IP EGP AS Information table.

SourceAS
A value of `0` indicates the route should be advertised regardless of the Autonomous System (AS) it was received from. A value other than `0` indicates the route should only be advertised if the route was received from the specified AS.

IPNetwork
The address of the local IP network for which routing information will be advertised.

IGPMetric
This value, along with **Metric**, determines the cost reported to EGP of accessing the internal IP network. If this value is `on`, the cost advertised to EGP will be identical to the locally reported routing table cost (from RIP or OSPF). If this value is `off`, **Metric** is reported.

Metric
A configured cost of the route to the interior network, interpreted as a hop count. This cost is reported to EGP if **IGPMetric** is `off`.

Input Table
This area of the IP Interchange Table view has the following column headings:

Index
Number identifying a particular input route.

NeighAS
A neighboring AS to which route information will be readvertised via OSPF and RIP. A value of `0` adds the route to the default Input Exchange Table.

IPNetwork
The IP address of a network for which EGP received routing information.

EGPMetric
Defines the source of the internally readvertised costs of reaching the external IP network for this entry. If value is `on`, the readvertised cost will be identical to the cost received by the EGP protocol. If value is `off`, **Metric** is reported.

Metric
A configured cost of the route.

Filter/Gateway/Priority Info View

Access: *From the **Icon Subviews** menu for the MotRouterApp Application icon, select **Filter/Gateway Info.***

This view has the following three defined areas:

Traffic Info

This area of the Filter/Gateway/Priority Info view provides the following information:

Ip Traffic Priority
The priority for IP traffic relative to the rest of the traffic transmitted over WAN virtual circuits. Default value is `high`. Other possible values are `low`, `medium`, and `expedite`.

Ipx Traffic Priority
The priority for IPX traffic relative to the rest of the traffic transmitted over WAN virtual circuits. Default value is `high`. Other possible values are `low`, `medium`, and `expedite`.

Max Ip Interfaces
The maximum number of IP interfaces that can be supported by the router.

Filter Table

This table within the Filter/Gateway/Priority Info view has the following column headings:

Index
Number identifying a particular filter.

DestIPAddr
IP address of a network/subnet to filter. All packets destined for a filtered network are discarded, and no route to the filtered network is advertised.

AddrMasks
Network (or subnetwork) address mask associated with the network/subnet address to filter.

Default Gateway Table

This table within the Filter/Gateway/Priority Info view has the following column headings:

Index
Number identifying a particular default subnet gateway.

SubnetAddr
The top-level IP address for the gateway. This must be a class A, B, or C IP address. If this router receives a packet destined to an unknown subnet of that top-level net, it will forward the packet to the default subnet router for that net.

NextHopAddr
The IP address of the next hop towards a router performing subnet routing for the top-level net of this record. This next hop must be to an IP address on a network directly connected to this router.

Metric
The cost metric for a transmission to the default subnet gateway, usually the number of network hops to reach that other router.

IP BOOTP Server Info View

Access: *From the **Icon Subviews** menu for the MotRouterApp Application icon, select **IP BOOTP Server Table.***

This view contains a table that lists IP addresses for BootP servers to which the router will forward BootP requests if **BootpForwarding** is enabled for the router. The view also displays the following three settings.

BOOTPServerAddr
The BootP server address.

BootpForwarding
Indicates whether BootP forwarding is enabled/disabled for this router. BOOTP (Boot Parameters) is a protocol that allows workstations to obtain their startup operating system software and other parameters from a BOOTP server host on the IP network.

Bootp Max Hops
The maximum cost metric (hop count) a BootP request is allowed to attain before being discarded.

Bootp Idle Time (sec)
The number of seconds the router will wait for a BOOT request to be repeated before forwarding the request to BOOTP Server.

Motorola Node Management Application (MotNodeMgmtApp)

This major application (model type MotNode MgmtApp) provides the following application-specific subviews:

- *SNMP Agent Details View* (Page 67)
- *Node Configuration View* (Page 68)
- *Node Statistics View* (Page 72)
- *Board Statistics View* (Page 74)
- *Port Statistics View* (Page 75)
- *Board Table View* (Page 76)

SNMP Agent Details View

Access: *From the **Icon Subviews** menu for the MotNodeMgmtApp Application icon, select **SNMP Agent Details.***

This view provides the following information about the device's SNMP agent:

Primary UDP Port
The primary User Datagram Protocol (UDP) port used by the SNMP Agent. Default value is 161.

Secondary UDP Port
The secondary UDP port used by the SNMP Agent.
Default value of `162`.

Trap Send
Enables/disables the SNMP agent's trap send
capability.

SNMP Agent Timer
An internal timer used by the SNMP agent, in
units of 20 ms.

Boot Agent
This menu button lets you determine whether the
SNMP agent will boot. Valid values are: `boot`,
`noboot`.

Reset Statistics
This menu button lets you determine whether the
SNMP agent will reset all its statistics. Valid
values are `reset`, `noreset`.

Generic Traps Type
This menu button lets you select a type of generic
trap.

Last Trap Info
The interesting information portion of the last
trap PDU issued by the SNMP Agent.

Node Configuration View

Access: From the **Icon Subviews** menu for the
MotNodeMgmtApp Application icon, select **Node
Configuration.**

This view (and a continuation accessed via the
More button at the bottom of the view) provides
node configuration information in the following
areas:

- *General Node Information* (Page 68)
  (unlabeled)
- *Thresholds* (Page 70)
- *Alarms* (Page 70)
- *Billing* (Page 71)
- *Traffic* (Page 71)
- *Codex Proprietary Information* (Page 72)

General Node Information

This area (located just below the banner of Node
Configuration View) contains the following
information:

Node Name
Up to 8 alphanumeric characters identifying the
modeled node. This name appears at the top of
control terminal menus and reports.

Node Number
Number identifying the node for X.25 routing
purposes to prevent routing loops.

Node Address
The main part of the X.25 network address for this node. Incoming calls with this value as the first part of the network address are routed to this node. The subaddress portion of the network address (Control Port Subaddress, etc.) routes the incoming call to a specific destination in the node.

Node Date Stamp
Date used for date stamps of events and traps, in yyyymmmdd format.

Chassis Type
Identifies the chassis type of the node. Valid values are: `standalone`, `modulus8`, `modulus18`, `modulus9`, `modulus19`, and `chassis6520`.

Maximum Routing Hops
The maximum number of nodes a call may pass through before reaching its destination.

Max simultaneous calls
The maximum number of simultaneous calls that can be handled. Limiting the number of calls eliminates data loss in extreme traffic conditions. A value of zero indicates unlimited calls.

Time Stamp
The node time, in hh:mm:ss format, used for time stamps of events and traps.

No. of Broadcast Networks
The number of Broadcast Networks to which this node can send broadcast messages. A value of zero means the broadcast function is disabled for this node.

Broadcast Port Subaddress
The broadcast subaddress for this node. Incoming broadcast messages with a network address consisting of the Node Address and this Broadcast Port Subaddress arrive at this port in this node. No Routing Table entry is needed.

No. of Broadcast Input Chans
The number of simultaneous broadcast messages that can be received.

Ctrl Port Idle DisconnectTime
The number of minutes of inactivity that can occur before the control terminal is automatically disconnected.

Control Port Subaddress
The Control Terminal Port (CTP) subaddress for this node. Incoming calls with a network address consisting of the node address for this node and this Control Port Subaddress arrive at this node's CTP.

Thresholds

This area of the Node Configuration view displays the following threshold settings:

Port Utilization Threshold

Sets the alarm level for traffic on every port in a node. The traffic is checked over a 64-second interval to determine average characters per second, which is compared to the port's clock rate to determine this threshold. If the percent of utilization exceeds the setting, an alarm is generated. Port utilization records are kept for each port, and the port in question is noted in the report.

Buffer Utilization Threshold

The percentage of temporary storage buffer usage above which an alarm will be generated.

CPU Utilization Threshold

The percentage of CPU time spent performing non-diagnostic functions above which an alarm will be generated.

Port Error Threshold

The number of port errors (such as parity or framing errors) that can be detected before a medium severity alarm is generated.

Alarms

This area of the Node Configuration view displays the following alarms settings:

Alarm Distribution

Specifies where alarm and event reports will be sent. Possible values are: `none` (if no reports are to be sent) or any combination of `ctp` (control terminal port), `prin` (printer—see **Alarm Printer Mnemonic**, described below), or `log` (the node's log, which may save up to 60 alarms).

Alarm Printer Mnemonic

The mnemonic name for the destination of alarms sent by the node if **Alarm Distribution** is set to "prin."

Alarm Threshold Timer

The amount of time that must elapse after generation of an alarm before the node can generate that alarm again.

Alarm Selection

The types of alarms and events that are reported by the node. Possible values are: `none`, `low`, `medium`, `high`, `conn` (connection events), and `code` (alarms from Codex 6000 Statistical Multiplexer devices).

Billing

This area of the Node Configuration view displays the following billing settings:

Billing Printer Mnemonic
The mnemonic name of the logging device port to which the node sends billing records.

Billing Record Call Threshold
The maximum number of billing records that can be stored in an internal buffer before they are sent to the logging device.

Max Billing Records
The maximum number of billing records the node stores if the logging device cannot receive the records for printing. After the number of records exceeds this value, old records are deleted from the buffer as new records are stored.

Billing Record Timer (minutes)
The number of minutes billing records are stored before they are automatically sent to a logging device for printing.

PVC Billing Record Timer (minutes)
The number of minutes billing records for PVCs (with billing activated) are stored before they are automatically sent to a logging device for printing.

General Product Feature Set
Identifies a general class of feature set for the product.

PAD Bulletin Message
Specifies the message that appears when a terminal connects to a PAD port and enters command mode. A value of `blank` indicates no message will appear.

PAD Banner Message
Specifies the message that PAD ports send to attached terminals that enter command mode.

Traffic

This area of the Node Configuration view displays the following traffic settings:

Traffic Priority
The default traffic priority for the node. Possible settings are: `low`, `medium`, `high`, and `exp`.

Traffic Priority Step
The number of packets to be transmitted for each lower priority packet transmitted.

Codex Proprietary Information

This area of the Node Configuration view displays the following Codex proprietary information:

Codex Group Facility

The facility used in call packets on Codex 6500 links for passing CODEX PRIVATE facilities other than Hop Count and DCP facilities between 4.xx nodes. This should be the same on all nodes in the network. It only needs to be changed if it interferes with some other private network facility.

Codex Proprietary Protocol ID

This value is put in the first byte of the Protocol Identifier field of the CUD in the Call Request packets for protocols that have not been assigned a standardized value by the CCITT.

Link - Max Frame Size

The largest datalink level frame that will ever be received on any link. On WAN links, this does not include space that is reserved internally for trailers.

Hop Count Facility

The facility used in call packets on X.25 links with the INL option for network routing. This should be the same in all nodes in the network. It need only be changed if it interferes with some other private network facility.

DCP Facility Code

This value is used in call request and call accept packets on X.25 links to carry DCP information at call setup and reconnection time. The code must be the same for all nodes in the network. The default value should be changed only when it interferes with some other facility. This value must not be the same as **Hop Count Facility**.

RouteLanSubaddr

Calls with network address composed of the node address and this subaddress will be routed to a LAN connection in this node.

Alarm Selection

Specifies the types of alarms and events that are reported by the node. Possible values are: `none`, `low`, `medium`, `high`, `conn` (connection events), and `code` (alarms from Codex 6000 Statistical Multiplexer devices).

Node Statistics View

Access: *From the* **Icon Subviews** *menu for the MotNodeMgmtApp Application icon, select* **Node Statistics.**

In addition to providing button access to a number of subviews, the Node Statistics view contains the following three defined areas:

- *Last Occurrences* (Page 73)
- *PVC Connections* (Page 73)

- *Reset Buttons* (Page 73)

Last Occurrences

This area of the Node Statistics view provides the following information:

Node Turn-on
The last time the node was turned on.

Reset Time
The last time the reset button was pressed.

Watchdog Timer Expiry
The last time the watchdog timer expired.

Node Reboot
The last time the configuration memory was changed or downloaded.

Fan Status
The operational status of the cooling fan. Possible values are: `notmonitored`, `operational`, and `impaired`.

PVC Connections

This area of the Node Statistics view displays the following information:

Current number of PVC connections
The number of permanent virtual circuit connections currently in place.

Max PVC connections since last reset
The highest number of permanent virtual circuit connections in place since the last reset.

Reset Buttons

This area of the Node Statistics view contains the following information:

Reset All Statistics
Toggling this menu button to `reset` resets all statistics for the node. The `noreset` setting has no effect.

Set Default Node
This menu button lets you keep the current configuration of the entire node (`nodefault`) or change back to the default settings (`default`).

> **⚠ Caution:** If you change this setting to "default," communications are disrupted and data could be lost after a boot. In addition, configuration settings are lost unless they have been saved to an external device.

The following four access buttons are located at the bottom of the Node Statistics view.

| Memory Statistics |

This button accesses a subview providing the following memory statistics:

- Compressed Config Memory Available
- Compressed Config Memory in use
- Uncompressed Config Memory Available
- Uncompressed Config Memory in use
- Last Occurrence of Config Memory change

| X25 specific statistics |

This button accesses a subview providing the following x.25 statistics:

- Number of Calls currently in place
- Number of Calls since last reset
- Number of Calls/sec
- Max no. of calls/sec

| Reset Node Stats Table |

This button accesses a table that lists all of the node's ports and allows statistics to be reset on a port-by-port basis.

| Node Throughput Statistics |

This button accesses a subview providing the following throughput statistics for the node:

- Current characters/sec
- Current packets/sec
- Max characters/sec since last reset
- Max packets/sec since last reset

Board Statistics View

Access: From the **Icon Subviews** menu for the *MotNodeMgmtApp Application* icon, select **Board Statistics.**

This view contains a table of statistical information about the boards installed in the modeled device. Column headings are as follows:

Board No.
Identifies a particular board in the modeled device.

DataBuffAvail
The number of data buffers available.

DataBuffInUse
The number of data buffers in use.

DataBuffGauge
The maximum number of data buffers in use since last reset.

MemAvailOnCard
Amount of memory available on the processor card in bytes.

MemUsedForDataBuff
Amount of memory used for data buffers in bytes.

FlashModuleSize
The size of the flash module in bytes. This refers to the currently selected bank of flash when there is an alternate bank of flash installed.

CPUutil
Percentage of time the CPU processed traffic data (as opposed to performing diagnostic tests or processing node-control data) in the last 64 seconds.

Port Statistics View

Access: *From the **Icon Subviews** menu for the MotNodeMgmtApp Application icon, select **Port Statistics.***

This view contains a table of statistical information about the modeled device's ports. Three buttons at the bottom of the view access

separate tables for receive, transmit, and error statistics. Column headings for the main table are as follows:

PortNo.
Identifies a particular port on the modeled device.

PortType
The type of port. Valid values are: `illegal`, `null`, `pad`, `x25`, `mux`, `test`, `spare2`, `spare3`, `spare4`, `mx25`, `spare`, `bsc2780`, `bsc3270`, `vip`, `pos`, `sdlc`, `ncrbsc`, `fri`, `xdlc`, `bstd`, `rs366`, `spare5`, `spare6`, `ibm2260`, `vap`, `tbop`, `n270`, `tcop`, `tr`, `sl`, and `eth`.

PortStatus
Current status of the port. Valid values are: `disabled`, `enabled`, `busyOut`, `up`, and `down`.

PortState
Current state of the port. The value `x28` indicates command mode; `pad` indicates data mode.

PortSpeed
This is the speed of the port when Clock=Int; this is detected clock speed if Clock=Ext. If Port Speed is `0`, Clock=Ext but clocking is not being received from attached device.

PktsQueued
Number of packets currently queued for output.

Receive

This button at the bottom of the Port Statistics view accesses the Port Receive Statistics table, which provides the following statistics for each port:

- Port Utilization (% of bandwidth being used)
- Total Characters Received
- Total Packets Received
- Total Frames Received
- Average Characters Received per second
- Average Packets Received per second
- Average Frames Received per second

Transmit

This button at the bottom of the Port Statistics view accesses the Port Transmit Statistics table, which provides the following statistics for each port:

- Port Utilization (% of bandwidth being used)
- Total Characters Sent
- Total Packets Sent
- Total Frames Sent
- Average Characters Sent per second
- Average Packets Sent per second
- Average Frames Sent per second

Errors

This button at the bottom of the Port Statistics view accesses the Port Errors table, which provides the following statistics for each port:

- Overrun Errors
- Underrun Errors
- CRC Errors
- Parity Errors
- Framing Errors

Board Table View

*Access: From the **Icon Subviews** menu for the MotNodeMgmtApp Application icon, select **Board Table.***

This view contains a table that provides configuration and status information about the boards installed in the modeled device. Column headings are as follows:

BoardNo.
Identifies a particular board in the modeled device.

BoardType
Describes the type of board (e.g., `motherboard`, `ethernet`, `modem`, etc.).

No.of I/OPort
The number of I/O ports for this board.

BoardStatus
Describes the current status of the board.

SerialNo.
The serial number of the board.

I/FType(DIM1)
The type of interface specified by DIM 1.

I/FType(DIM2)
The type of interface specified by DIM 2.

Voice Application (MotVoiceApp)

This major application (model type MotVoiceApp) provides the following application-specific subviews:

- *Voice Port Configuration Table View* (Page 77)
- *Voice Switch Configuration Table View* (Page 90)
- *Port Statistics Table View* (Page 92)

Voice Port Configuration Table View

*Access: From the **Icon Subviews** menu for the MotVoiceApp Application icon, select **Port Configuration.***

This table contains the port configuration parameters to configure the DSPM/E&M,

DSPM/FXS, DSPM/HC, and DSPM/SM. The following column headings are displayed:

PortNumber
The voice port number.

PortType
The port type. A value of `voice` signifies this is a voice port.

InterfaceType
The physical interfaces being used for this port. The entry must match the hardware. Table 18 lists possible Interface Types:

Table 18:   Interface Types

Interface Type	Description
eAndM2	2 wire E&M (Ear and Mouth) Interface. Only displayed for port numbers 1..54.
eAndM4	4 wire E&M (Ear and Mouth) Interface.
fxo	FXO (Foreign Exchange Office) Interface.
fxs	FXS (Foreign Exchange Station) Interface.
nc	Skipped during configuration.

signallingType
Select the E&M signalling type. Valid values are: `i`, `ii`, `iii`, `v`, and `nc`. This parameter is displayed for DSPM/E&M and skipped for FXS, FXO, and all virtual port types.

ELeadFilter
Selection for E lead filter enable or disable option. This parameter is displayed for DSPM/E&M and skipped for FXS, FXO, and all virtual port types. Valid values are: `enabled`, `disabled`, and `nc`.

HybridFXS
Hybrid balance filters and termination type based on country. Table 19 displays the valid filters:

Table 19:   Hybrid FXS Filters

Filter	Description
sixHundred	600 ohm interface for USA, Japan and Ireland.
Canada	600 ohms with 2.16 uF.

Table 19:   Hybrid FXS Filters

Filter	Description
Germany	220 ohms in series with (820 ohms in parallel with 115nF).
UK	300 ohms in series with (1K ohms in parallel with 220nF).
Belgium	150 ohms in series with (830 ohms in parallel with 72nF).
France	215 ohms in series with (1K ohms in parallel with 137nF).
nc	Skipped during configuration.

This parameter is displayed for DSPM/FXS and skipped for DSPM/E&M, DSPM/HC(FXO) and all virtual port types.

HybridEAndM2
Hybrid balance filters and termination type based on country. (Only for E&M-2wire interfaces.) Table 20 displays valid filters and descriptions:

Table 20:   HybridEAndM2 Filters

Filter	Description
sixHundred	600 ohm interface for USA, Japan and Ireland.
Germany	220 ohms in series with (820 ohms in parallel with 115nF).
UK	370 ohms in series with (620 ohms in parallel with 310nF).
nc	Skipped during configuration.

signallingMode
Select the voice signalling mode. Table 21 displays the valid signalling modes:

Table 21:   Signalling Mode

signalling Mode	Description
normal	Allows signalling to pass end to end and signalling will be used to control circuit state and packet flow.
node	A permanent voice path is established and packet flow is always enabled, but no signalling will be passed through.
nc	Skipped during configuration.

signallingContro
Select signalling control transmission mode in E&M interface type. Table 22 displays valid signalling control modes:

Table 22:   Signalling Control Transmission

Mode	Description
immediate	Digits are transmitted immediately.
wink	Digits are transmitted after the WINK pulse.
transparent	The voice signalling states are transmitted end to end without interpreting the signalling state.
delay	Digits are transmitted after the end of the Delay Dial signal.
masterColisee	65xx is simulating Colisee master mode.
slaveColisee	65xx is simulating Colisee slave mode.
seizureAcknowledge	Transmit Seizure acknowledge immediately after receiving a Seizure signal from the PBX.
nc	Skipped during configuration.

This value will be `nc` for FXO & FXS type interface.

NoOfDigitsToCol
Select number of digits to collect before making a call.

NoOfRings
Number of rings to be received before a call can be accepted. This parameter is displayed for FXO and skipped for E&M and FXS interface types. A value of `0` implies that this parameter was skipped during configuration.

PCMMode
Select the PCM encoder/decoder mode. Valid values are: `aLaw` and `muLAW`.

CompressionRate
Select the voice compression rate to be used by the DSP. Valid values are: `cD8K`, `c16k`, `cBD8K`, `cB16k`, `cE8Kb`, `cE16Kb`, and `nc`.

DSIControl
Select if the Digital Speech Interpolation (Silence Detector) will be used with this channel. Valid values are: `enabled`, `disabled`, and `nc`.

SmoothingDelay
Select maximum inter packet arrival jitter due to network in milliseconds.

EchoControl
Select echo control. Valid values are: `disabled`, `enabled`, and `nc`. This parameter will be skipped

in normal mode and only displayed when DEBUG is turned on.

EchoReturnsLoss
Select echo return loss in dBm. Valid values are: `minus3`, `minus6`, `minus9`, `minus12`, and `nc`.

TxInputSignalLe
Enter the input signal level. To be specified in steps of 0.5 dBm.

Table 23:   FXO Interface Type

Type	Input Signal Level
600 Ohms	+6.0 to -2.5dbm
600 Ohms Adaptive	+6.0 to -2.5dbm

Table 24:   FXS Interface Type]

Type	Input Signal Level
600 Ohms	+6.0 to -6.0dbm
Canada	+6.0 to -5.5dbm
UK	+4.5 to -7.5dbm
Germany	+4.0 to -8.0dbm
France	-2.0 to -9.0dbm
Belgium	+4.0 to -8.0dbm

Table 25:   E&M Interface Type

Type	Input Signal Level
4-Wire/600	+7.0 to -16.0dbm
2-Wire/600	+7.0 to -16.0dbm
2-Wire/UK	+5.0 to -16.0dbm
2-Wire/Germany	+5.0 to -16.0dbm
Virtual Ports(100 and above)	+8.0 to -6.0dbm

Table 27:   FXS Interface Type

Type	Input Signal Level
600 Ohms	+0.0 to -9.0dbm
Canada	+0.0 to -9.0dbm
UK	-1.5 to -9.0dbm
Germany	-2.0 to -9.0dbm
France	-1.5 to -9.0dbm
Belgium	1.5 to -9.0dbm

Entering a negative number for the "Input Signal Level" will result in the DSPM card amplifying the signal by that many dB. Level will result in the DSPM card attenuating the signal by that many dB.

RxOutputSingalL
Enter the output signal level. To be selected in steps of 0.5 dBm.

Table 26:   FXO Interface Type

Type	Input Signal Level
600 Ohms	+0.0 to -8.0dbm
600 Ohms Adaptive	+0.0 to -8.0dbm

Table 28:   E&M Interface Type

Type	Input Signal Level
4-Wire/600	+7.0 to -16.0dbm
2-Wire/600	+3.0 to -16.0dbm
2-Wire/UK	+1.0 to -16.0dbm
2-Wire/Germany	+0.0 to -16.0dbm
Virtual Ports(100 and above)	6.0 to -8.0dbm

Entering a negative number for the "Output Signal Level" will result in the DSPM card attenuating the signal by that many dB. Entering

a positive number for the "Output Signal Level" will result in the DSPM card amplifying the signal by that many dB.

FaxSupport
Selects whether the FAX data is to be supported. Valid values are: `disabled`, `enabled`, and `nc`.

FaxRates
The speed to switch to, when FAX data is detected. This parameter is ignored if Fax support was disabled. Valid values are: `fr9600`, `fr4800`, and `nc`.

BandDetect
Modem data detection. Valid values are: `yes`, `no`, and `nc`. This parameter will be skipped in normal mode, and displayed only when DEBUG is turned on.

AutoCallMnemoni
This mnemonic name is used to originate the call. It consists of 0 - 8 alphanumeric characters.

CallControl
Select calling method. Table 29 displays the valid methods and descriptions:

Table 29:   Calling Methods

Method	Description
offhook	Call only when Offhook. Disconnect on Onhook.
auto	SVC does not depend on On/Offhook condition. It remains established permanently after the power-up.
switched	Call only when interface goes offhook and disconnect call when interface goes onhook. Destination is determined by the DTMF digits received.
nc	Skipped during configuration.

AutoCallTimeout
Time interval between two successive calls in case of failure of previous call. Used only in "Auto" call control mode. This parameter will be skipped if **CallControl** is "Offhook" or "Switched."

CallRetries
Enter maximum number of call retries when previous call failed. Used only in Auto Call Control mode. The value `0` means try forever. This parameter will be skipped if **CallControl** is "Offhook" or "Switched."

GroupSubaddress
Specifies a port subaddress that is shared by several Voice ports. Incoming calls with this subaddress are routed to one of several ports sharing this subaddress. Another name for the group of ports with the same Group Subaddress is Hunt Group.

Billing
This controls whether billing (accounting) records will be created for calls on this port. Valid values are: `enabled`, `disabled`, and `nc`.

RxsignallingStat
The amount of time to declare a valid supervisory signalling state change. The granularity is 10 milliseconds.

T1E1RxIdleOnhoo
The signalling state that represents the idle state. For E1 ports and T1 ESF ports, these bits represent the ABCD signalling bits on the interface. For T1 SF ports these bits represent ABAB signalling bits. The value `x` means don't care. The range is from `0000` to `1111`.

T1E1TxIdleOnhoo
The signalling state that represents the idle state. For E1 ports and T1 ESF ports, these bits represent the ABCD signalling bits on the interface. For T1 SF ports these bits represent

ABAB signalling bits. The range is from `0000` to `1111`.

T1E1RxActiveOff
The signalling state that represents the active state. For E1 ports and T1 ESF ports, these bits represent the ABCD signalling bits on the interface. For T1 SF ports these bits represent ABAB signalling bits.The value `x` means don't care. The range is from `0000` to `1111`.

T1E1TxActiveOff
The signalling state that represents the active state. For E1 ports and T1 ESF ports, these bits represent the ABCD signalling bits on the interface. The range is from `0000` to `1111`.

T1E1RingingStat
The signalling state that represents the ringing state. For E1 ports and T1 ESF ports, these bits represent the ABCD signalling bits on the interface. For T1 SF ports, these bits represent ABAB signalling bits.The value `x` means don't care. The range is from `0000` to `1111`.

T1E1NoRingingSt
The signalling state that represents the no ringing state. For E1 ports and T1 ESF ports, these bits represent the ABCD signalling bits on the interface. For T1 SF ports these bits represent

ABAB signalling bits. The value x means don't care. The range is from 0000 to 1111.

RxWinkStartTime
The maximum time to wait for the beginning of the wink signal from the PBX before declaring a wink start malfunction. Granularity is 50 milliseconds.

RxMinimumReceiv
The amount of time required to declare a valid wink. Granularity is 10 milliseconds.

RxCalledEndGlar
The length of time when a wink pulse will be detected as a glare condition. Granularity is 50 milliseconds.

RxFirstDigitTim
The maximum time (in seconds) to wait for the first DTMF digit before declaring a "busyout" state. Granularity is 1 second.

RxInterdigitTim
This is the maximum time (in seconds) to wait for a subsequent receive digit before declaring a misdial. Granularity is 1 second.

TxWinkDelay
The time delay from receiving a valid Offhook state to start transmitting a wink. Granularity is 10 milliseconds.

TxWinkWidth
The width of the transmitted wink pulse. Granularity is 10 milliseconds.

TxDigitDelay
The time delay before transmitting the first DTMF digit after a wink is received. Granularity is 10 milliseconds.

TxDigitOn
The time DTMF digits are transmitted. Granularity is 10 milliseconds.

TxInterdigitTim
The time between transmitting DTMF digits. Granularity is 10 milliseconds.

RxInterringWait
The maximum time to wait for subsequent receive rings before declaring a call abandoned condition. Granularity is 1 second.

RxRingStateChan
The amount of time to declare the change in the ring state. Granularity is 50 milliseconds.

TxRingerOffLong
This timer is the "long off" period for ringer cadences that have a short and long off period. For the cases where the ring cadence defines one off period, the Tx Ringer Off Long must be equal

to Tx Ringer Off Short. Granularity is 50 milliseconds.

TxRingerOffShor

This timer is the "short off" period for ringer cadences that have a short and long off period. For the cases where the ring cadence defines one off period, the Tx Ringer Off Long must be equal to Tx Ringer Off Short. Granularity is 50 milliseconds.

TxRingerOn

The time of the ringer on pulse. Granularity is 50 milliseconds.

RxDisconnectTim

The amount of time required to receive idle signalling to disconnect a call. For an analog FXO port, RX idle signalling is the loss of loop current. For a FXS port, RX idle signalling is when the interface goes onhook. For an analog E&M port, RX idle signalling is when the "M" lead goes idle. For digital interfaces, the RX idle state is defined by the 'T1/E1 Rx Idle (on-hook) State' parameter.

RxCalledEndDisc

The additional amount of time beyond the Rx Disconnect filter the calling end must be Onhook to disconnect a call. Granularity is 1 second.

LineErrorRecove

The length of time voice will be suppressed after LOS or OF condition clears. Granularity is 10 milliseconds. This parameter will be displayed for virtual ports only.

signallingSample

The time between sampling received signalling states and line states. Granularity is 1 millisecond. This parameter will be displayed only when the DEBUG flag is set.

WaitForParams

The amount of time to wait for a message to set the parameters after receiving a disconnect message (messages occur in the form of an event) before busying out the port. Granularity is 1 second. This parameter will be displayed only when the DEBUG flag is set.

SpareTimer1

Spare timer number 1. Granularity is 1 millisecond. This parameter will be displayed only when the DEBUG flag is set.

SpareTimer2

Spare timer number 2. Granularity is 1 millisecond. This parameter will be displayed only when the DEBUG flag is set.

TxInterdigitPau
The time between transmitting DTMF digits. Enter in steps of 10 msec.

RxMinimumFlashH
The shortest length of time required to be onhook to be recognized as a flash-hook. This value must be less than **RxMaximumFlashH** for flash-hook to be recognized.

RxMaximumFlashH
The longest length of time required to be onhook to be recognized as a flash-hook. This value must be greater than **RxMinimumFlashH** for flash-hook to be recognized.

TransparentSign
The received signalling state that represents the idle state. For E1 ports and T1 ESF ports, these bits represent the ABCD signalling bits on the interface. The value X means don't care. For E&M analog ports, Onhook is assumed for the idle state. The range is 0000 to 1111.

TransparentRxDi
The time the received signalling state must be equal to the idle state to disconnect the voice call. Zero value disables idle state disconnect and maintains the voice call in the answered state. Time is entered in minutes.

TrsprntSingalin
The received signalling state that represents the Busyout state. For E1 ports and T1 ESF ports, these bits represent the ABCD signalling bits on the interface. For E&M analog ports, Offhook is assumed for the busyout/alarm state. The range is 0000 to 1111.

XlateSig0000Fro - XlateSig1111Fro
Translate the signalling information received from the remote end to a value to be transmitted out the local port. If the local port is a T1/ESF or E1 port enter the ABCD values, for a T1/SF port, enter the AB(AB) value. If the local port is an analog E&M port, enter 0000 for idle (Onhook) and 1111 for active (Offhook). The range is 0000 to 1111.

XlateSig1000Fro
Translate the signalling information received from the remote end to a value to be transmitted out the local port. If the local port is a T1/ESF or E1 port enter the ABCD values, for a T1/SF port, enter the AB(AB) value. If the local port is an analog E&M port, enter 0000 for idle (Onhook) and 1111 for active (Offhook). The range is 0000 to 1111.

XlateSig0100Fro
Translate the signalling information received from the remote end to a value to be transmitted out

the local port. If the local port is a T1/ESF or E1 port enter the ABCD values, for a T1/SF port, enter the AB(AB) value. If the local port is an analog E&M port, enter 0000 for idle (Onhook) and 1111 for active (Offhook). The range is 0000 to 1111.

XlateSig1100Fro
Translate the signalling information received from the remote end to a value to be transmitted out the local port. If the local port is a T1/ESF or E1 port enter the ABCD values, for a T1/SF port, enter the AB(AB) value. If the local port is an analog E&M port, enter 0000 for idle (Onhook) and 1111 for active (Offhook). The range is 0000 to 1111.

DialLwFre
The lower of the two frequencies needed to generate the dial tone.

DialLwFreAmplit
The amplitude of the lower frequency to generate the dial tone. To be specified in steps of 0.5dB, -30dB turn off output. The range is from -30dBm to -3dBm.

DialupoFre
The higher of the two frequencies needed to generate the dial tone.

DialUpFreAmplit
The amplitude of the upper frequency to generate the dial tone. To be specified in steps of 0.5dB, -30dB turn off output. The range is from -30dBm to -3dBm.

RingBackLwFre
The lower of the two frequencies needed to generate the Ringback tone.

RingBackLwFreAm
The amplitude of the lower frequency to generate the Ringback tone. To be specified in steps of 0.5dB, -30dB turn off output. The range is from -30dBm to -3dBm.

RingBackUpFre
The higher of the two frequencies needed to generate the Ring-back tone.

RingBackUpFreAm
The amplitude of the upper frequency to generate the Ringback tone. To be specified in steps of 0.5dB, -30dB turn off output. The range is from -30dBm to -3dBm.

BusyLwFre
The lower of the two frequencies needed to generate the Busy tone.

BusyLwFreAmplit

The amplitude of the lower frequency to generate the Busy tone. To be specified in steps of 0.5dB, -30dB turn off output. The range is from -30dBm to -3dBm.

BusyUpFre

The higher of the two frequencies needed to generate the Busy tone.

BusyUpFreAmplit

The amplitude of the upper frequency to generate the Busy tone. To be specified in steps of 0.5dB, -30dB turn off output. The range is from -30dBm to -3dBm.

TxBusyOffTime

Timer for the Busy tone off state. Granularity is 50 milliseconds.

TxBusyOnTime

Timer for the busy tone on state. Granularity is 50 milliseconds.

FastBusyLwFre

The lower of the two frequencies needed to generate the Fast Busy tone.

FastBusyLwFreAm

The amplitude of the lower frequency to generate the Fast Busy tone. To be specified in steps of

0.5dB, -30dB turn off output. The range is from -30dBm to -3dBm.

FastBusyUpFre

The higher of the two frequencies needed to generate the Fast Busy tone.

FastBusyUpFreAm

The amplitude of the upper frequency to generate the Fast Busy tone. To be specified in steps of 0.5dB, -30dB turn off output. The range is from -30dBm to -3dBm.

TxFastBusyOffTi

Timer for the Fast Busy tone off state. Granularity is 50 milliseconds.

TxFastBusyOnTime

Timer for the Fast Busy tone on state. Granularity is 50 milliseconds.

HybridFXO

Hybrid balance filters. Valid values are: `sixHundred`, `adaptive`, and `nc`. This parameter is displayed for DSPM/HC (FXO) and skipped for DSPM/E&M, DSPM/FXS and all virtual port types.

TxPulse

The width of the transmitted Seizure, PTS, or Answer pulse in msec.

RxMinPulse
The minimum pulse width to declare a valid received Seizure, PTS, or Answer pulse.

RxMaxPulse
The maximum pulse width to declare a valid received Seizure, PTS, or Answer.

TxMasterClear
The width of the transmitted Master Clear-Forward, Clear-Back, or Release Guard pulse in msec.

RxMinMasterClea
The minimum pulse width to declare a valid received Master Clear-Forward, Clear-Back, or Release Guard.

RxMasMasterClea
The maximum pulse width to declare a valid received Master Clear-Forward, Clear-Back, or Release Guard.

TxSlaveClear
The width of the transmitted Slave Clear-Forward or Clear-Back pulse in msec.

RxMinSlaveClear
The minimum pulse width to declare a valid received Slave Clear-Forward or Clear-Back.

RxMaxSlaveClear
The maximum pulse width to declare a valid received Slave Clear-Forward or Clear-Back.

TxSlaveRelease
The width of the transmitted Slave Release Guard pulse in msec.

RxMinSlaveRelea
The minimum pulse width to declare a valid received Slave Release Guard.

RxMaxSaveRelea
The maximum pulse width to declare a valid received Slave Release Guard.

TxPTSTime
The time delay from receiving a valid Seizure from the PBX to start transmitting a PTS pulse.

RxPTSTime
The maximum time to wait for a PTS pulse from the PBX after sending a Seizure before giving up and clearing the trunk.

MasterGuard
The time the master side waits in the guard state after transmitting a clear pulse.

SlaveGuard
The time the slave side waits in the guard state after transmitting a clear pulse.

TxFlashHookTime
The length of time a flash signal will be transmitted as a result of a flash-hook from the remote interface.

DtmfAmplitude
The amplitude of the DTMF digits. To be specified in steps of 0.5dB, -30.0 turn off output. The range is from -30dBm to -3dBm.

FXSOffhookFilte
This is the amount of time a valid OFFHOOK condition must be present before an analog FXS will declare OFFHOOK.

Voice Switch Configuration Table View

Access: *From the **Icon Subviews** menu for the MotVoiceApp Application icon, select **Switch Configuration.***

This view contains the following information:

RxDTMFDigitS
Select the voice number plans for the 6520/6560 network.

The received DTMF digits received by the voice interface is compared to this parameter. Enter a trailing asterisk (*) as a wild-card. Use the space bar to blank the parameter. Range: 1 to 20 characters (valid characters are 0 through 9, '-', ',', '/', and '*'). The characters '-', ',', and '/' are

allowed only for ease of reading. They are not sent to the remote port.

Note: The maximum number of digits that can be sent to the remote end is 16.

NumRxDigitTo
Select the number of DTMF digits to be received before making the call request.

CallParam
Define the network address of the called node and the port or Hunt Group number of the desired destination port.

AlternateDes
The alternate destination.

CompressionO
Select the voice compression override algorithm. Table 30 displays the compression overrides and descriptions:

Table 30:   Compression Overrides

Compression OR	Description
none	No override, use port configured value.
c8k	8k CVSELP.
c16k	16k CVSELP.
cB8k	Bundled 8k CVSELP.
cB16k	Bundled 16k CVSELP.
cE8Kb	Enhanced Bundled 8k CVSELP.
cE8Kb	Enhanced Bundled 16k CVSELP.
nc	Skipped during configuration.

NumLeadingDi
Select the number of leading digits to be stripped off the received digits stream before sending the digits stream to the remote port.

PreFixDigits
Select digits to be added in front of or at the end of the received stream (after the stripped digits are removed) before sending the digit stream to the remote port. Range: 1 to 20 characters (valid characters are 0 through 9, '*', '#', 'R', 'P', and '-'). The character '-' is allowed only for ease of

reading. It is not sent to the remote port. The 'P' character is used to indicate a pause is required in the playout of the digits at the remote end. The length of the pause is equal to "Tx Interdigit Pause Time" as defined at the called port (destination port). Leading 'P' characters are not supported. The character 'R' is used to separate the prefix digit string from the postfix digit string. The maximum number of digits that can be sent to the remote end is 16.

PostFixDigits
Select DTMF digits to be added at the end of the received DTMF stream before sending the digit stream to the remote port. Range: 1 to 20 characters (valid characters are 0 through 9, '-', ',', '/', '*', '#', and 'P'). The characters '-', ',', and '/' are allowed only for ease of reading. They are not sent to the remote port. The 'P' character is used to indicate a pause is required in the playout of the digits at the remote end. The length of the pause is equal to "Tx Interdigit Pause Time" as defined at the called port (destination port). The maximum number of digits that can be sent to the remote end is 16.

EntryNumber
The entry number in the Voice Switch Table.

Port Statistics Table View

Access: *From the* **Icon Subviews** *menu for the MotVoiceApp Application icon, select* **Port Statistics Table.**

This view provides the voice port statistics. Column headings are as follows:

PortNumber
Port number of the Voice Port.

PortInterface
The type of DPSM card used.

Table 31: Port Interfaces

Parameter	Type of DPSM Card
eAndM2	DPSM/E&M
eAndM4	DPSM/E&M
fxo	DPSM/HC(FXO)
fxs	DPSM/FXS

HWRevAndPartN
Hardware revision and part number of the main card. The revision number has format n.n and the part number is an 8-digit number of the form nnnnnnnn.

FortyEightVol
This parameter indicates whether the 48 volt power supply is installed in the node. Valid values are: `none`, `present`, and `na`. This parameter will not be displayed for DSPM/HC.

PortState
The status of the port. Valid values are: `enable` and `disable`.

CircuitState
The state of the SVC associated with this port. Valid values are: `connected` and `disconnected`.

CurrentMode
The current operating mode of the DSP. Valid values are: `voice`, `pcm`, and `fax`.

TimeOfLastSta
The time since the last statistic reset using the format (mm:dd:yyyy:hh:mm:ss).

CallDuration
The duration of the current (last) call using the format (hh:mm:ss).

TotalCallDura
The total time of all calls since last reset. It is measured from Offhook to Onhook and uses the format (hh:mm:ss).

PortUtilizati
This parameter is calculated as the ratio of "Total Call Duration" to "Time Of Last Reset." It is a percentage value of the form nnn%.

NumberOfCalls
The total number of calls since the last reset.

LastDigitsTra
The last DTMF digits transmitted to the voice interface. Not supported at this time.

DigitsRec
The last DTMF digits received from the voice interface. Not supported at this time.

TxPacketDropp
The number of times transmit packets were dropped due to DSPM congestion.

RxPacketDropp
The number of times receive packets were dropped due to network overload or processor loading.

DroppedPacket
The estimate of packets dropped "end to end" in the network.

DSPInternalFa
The number of recoverable software faults. It is displayed only when the DEBUG flag is set.

TxPackets
The number of packets received from the network port since the last reset.

RxPackets
The number of packets sent to the network port since the last reset.

TxPacketPerS
The average number of packets transmitted per second. It is calculated as the ratio of "Tx Packets" to "Total Call Duration."

RxPacketPerS
The average number of packets received per second. It is calculated as the ratio of "Rx Packets" to "Total Call Duration."

DSlEfficiency
This parameter is calculated by dividing "Rx Packets/sec" by the packet rate. It is a percentage value.

CurrentRate
The current compression rate being used.

Table 32: Current Rate

Current Rate	Description
cD8K	Compression rate is 8K.
cBD8K	Compression rate is bundled 8K.
cE8Kb	Compression rate is Enhanced bundled D8K.
cD16K	Compression rate is 16K.
cBD16K	Compression rate is bundled 16K.
cE16Kb	Compression rate is Enhanced bundled D16K.
cPcm	Compression rate is PCM.
cFax	Compression rate is FAX.
na	Value not available.

InputPower
The input power level in dBm.

OutputPower
The output power level in dBm.

FAXTransmissi
The number of FAX transmissions spoofed.

UnsupportedFm
The number of FAX transmissions requesting unsupported formats but transmitted using ISG formats.

PPSTsignallingSeqTrapTxS
The transmitting voice signalling state is displayed as ABCD (i.e. 1010).

PPSTsignallingSeqTrapRxS
The receiving voice signalling state is displayed as ABCD (i.e. 1010).

PPSTsignallingSeqTrapMac
The voice signalling state machine state is an 11 character field representing the state of the signalling software.

PPSTsignallingSeqTrapTim
The time from the previous state to this state, measured in milliseconds.

PPSTsignallingSeqTrapCom
The comment field is an ASCII string up to 16 characters long.

CurrentStatus
This is the call processing state machine status. Valid values are: `inhibited`, `disconnected`, `calling`, `called`, `connected`, and `null`.

ClearCauseCod
The last "clear cause code" received. Every code corresponds to an integer value followed by its text description in parenthesis. e.g. - Consider the clear cause code for "number busy" which is CAUSE_CLR_NUM_BSY.

ClearDiagnost
The last clear diagnostic received. Every code corresponds to an integer value followed by its text description in parenthesis. e.g. - Consider the diagnostic code for 'invalid bits in packet' which is DIAG_INV_PKT_BITS. This corresponds to :041 (invalid bits in packet).

InCallPxkCall
The called address present in the last inbound call packet.

InPckCallingA
The calling address present in the last inbound call packet.

InCallPckFaci
The facilities present in the last inbound call packet.

InCallPckCUD
The call user data present in the last inbound call packet.

OutCallPckCal
The called address present in the last outbound call packet.

OutPckCalling
The calling address present in the last outbound call packet.

OutCallPckFac
The facilities present in the last outbound call packet.

OutCallPckCUD
The call user data present in the last outbound call packet.

RingerStatus
The Ringer status on the board. It is displayed only for DSPM/FXS interfaces. Valid values are: `rs25Hz`, `rs50Hz`, and `na`.

DSPMSMSlotNum
The slot of the DSPM/SM. It is displayed only for DSPM/SM interfaces. A value of `0` indicates that this parameter is not available.

DSPMNumber
The DSP used for the virtual port. It is displayed only for DSPM/SM interfaces. A value of `0` indicates that this parameter is not available.

T1E1PortNumbe
The port number of the T1 or E1 port this voice channel is on. It is displayed only for DSPM/SM interfaces. A value of 0 indicates that this parameter is not available.

TimeSlotNumbe
The time slot number. It is displayed only for DSPM/SM interfaces.

DaughterCardR
Hardware revision and part number of the daughter card. The revision number has format n.n and the part number is an 8 digit number. It is displayed only for DSPM/HC interfaces.

Motorola WAN Applications (MotWANApps)

This major application (model type MotWANApps) has two minor applications: (model types MotT1E1App and MotX25App). The Icon Subviews menu associated with this application provides access to the following application-specific views:

- MotT1E1App
  - *Virtual Port Mapping Table* (Page 96)
- MotX25App
  - *X.25 Configuration Table View* (Page 98)

- *X.25 Statistics Table View* (Page 106)
- *Translation Configuration Table View* (Page 110)

Virtual Port Mapping Table

Access: *From the **Icon Subviews** menu for the MotT1E1 App Application icon, select **Port Mapping.***

This table contains the T1/E1 Virtual Port Mapping Table parameters. Column headings are as follows:

PortNo.
A T1/E1 virtual port number this channel is associated with. A value of 0 implies that this parameter was skipped during configuration.

PortType
The type of virtual port. displays the port types and descriptions:

Table 33:   Port Types

Port Type	Description
voice	The virtual voice port operates on a configured DS0.
data	The virtual data port operates on a configured DS0.
switchedVoice	The virtual voice port operates on a DS0 determined by the ISDN/QSIG D Channel.
switchedData	The virtual data port operates on a DS0 determined by the ISDN/QSIG D Channel.
nc	Skipped during configuration.

PhyPortNo
The E1 or T1 port number this channel is associated with. A value of `0` implies that this parameter was skipped during configuration.

TimeSlotNo
Time slot assignment for the logical channel. T1 ports have time slots in the range (1..24) while E1 ports have time slots in the range (1..31). In addition, Time Slot 16 is not allowed (invalid) for E1 ports. A value of 0 implies that this parameter was skipped during configuration.

DSORate
The number of valid data bits within each DS0 for this port. Valid values are: `ds056k` (7 bits of the DS0 contains data information, the 8th bit is used for 1's density), `ds064k` (All 8 bits of the DS0 contain data information. DS0 Rate for ports configured with port type 'voice' is always 64K, while for ports configured with port type 'data', it is 56K or 64K, the default being 56K.) and `nc`.

PhyIntfact
Selects the type of physical interface for the Virtual Port. Valid values are: `t1e1` (the physical interface is a T1 or E1 card), `so` (the physical interface is a SO card), and `nc`.

SOPortNo
The port number of the SO interface this virtual port is associated with. A value of 0 implies that this parameter was skipped during configuration.

B-Chan
The B-channel on the SO interface this virtual port is associated with. A value of 0 implies that this parameter was skipped during configuration.

SubscribAddr
The Local Subscriber Address for this virtual port.

> For Incoming Calls: The Called Party number received by the aggregate interface is compared to this parameter.

For Outgoing Calls: This will be passed as the outgoing Calling Party number. Enter a trailing asterisk(*) as a wild-card. Use the space bar to blank the parameter. 1 to 20 characters (valid characters are 0 through 9, '-', ',', '/', '(', ')', and '*'). The characters '-', ',', '(', ')', and '/' are allowed only for ease of reading.

NetSpecCall
Select the network specific call-by-call feature. Table 34 displays the features and descriptions:

Table 34:   Network Specific Calls

Feature	Description
none	No network-specific facility.
attSdn	AT&T Software Defined Network or Northern Tel Private Net.
attMc800	AT&T Megacom800 or Northern Tel InWats.
attMc	AT&T Megcom or Northern Tel OutWats.
ntFx	Northern Tel Foreign Exchange.
ntTieTrunk	Northern Tel Tie Trunk.
attAccunet	AT&T Accunet.
attInt800	AT&T International 800 Service.
attMq	AT&T MultiQuest or NT TRO call.
nc	Skipped during configuration.

PtyNoCCITT
This is the Calling/Called party Number Type as defined by ITU-T. Valid values are: `unknown`, `international`, `national`, `subscriber`, `abbreviated`, and `nc`.

PtyNoAT&T
The Calling/Called party Numbering Plan as defined by ITU-T. Table 35 displays the valid types:

Table 35:   Numbering Plan

Type	Description
unknown	Unknown numbering plan.
isdn	Recommendation E.164/E.163.
telephony	Telephony numbering plan.
private	Private numbering plan.
nc	Skipped during configuration.

X.25 Configuration Table View

Access: *From the **Icon Subviews** menu for the MotX25App Application icon, select **Configuration Table.***

This view contains a table that displays general configuration information about the device's X.25 ports. Buttons at the bottom of the view access separate tables for PDN information and statistics

on calls, packets/frames, and logical links/timers. Column headings are as follows:

PortNo.
Identifies a particular port on the modeled device.

ConnType
Numeric code indicating the control signal handshake and clocking requirements for a connection to this port. Table 36 lists the possible code values and their meanings.

Table 36:   ConnType Codes

Code	Description
simp	Simple, no control signals required.
dtr	Dedicated, requires the data terminal ready signal (DTR).
dtrd	Same as DTR, except data set ready (DSR) drops between calls.
emri	Port emulates a dial modem with ring indicator (RI).
emdc	Port emulates a dial modem with data carrier detect (DCD).
dimo	Port handshakes with attached dial modem.
dimoan	Same as DIMO except DSR never raised on incoming call from modem.

Table 36:   ConnType Codes

Code	Description
dimob	Same as DIMO except DSR follows DTR on incoming call from modem.
dimov	Port handshakes with attached V.25 bis dial modem.
simpv	SIMP/DIMOv, modem will switch from Leased to Dial-only mode when leased line goes down (used with Link Backup only).

PortCont
Possible Port Control values are NONE (no option specified) or MB (raise Pin 22 when the port becomes disabled).

ClockSource
Indicates whether the clock source for the port is internal or external.

ClockSpeed
The speed of the port in bits per second, when using internal clocking. The highest available speed is dependent on the card type and the interface type. Default value is 9600.

Options
Identifies any options in effect for this port. Applicable codes and descriptions for X.25 ports

are listed in the following table. Table 37 lists the port option codes and descriptions:

Table 37:   X.25 Port Option Codes

Code	Description
NONE	No option specified.
1980	Use X.25 1980.
NUI	Perform network user ID validation check.
PDN	Connected to Public Data Network.
CUD	Use call user data sub-addressing.
IBAR	Bar all calls coming in from X.25 port user.
OBAR	Bar all calls going out to X.25 port user.
CBCK	Allow routing inbound calls back out this port.
CUG	Check closed user group; otherwise, CUG passes transparently.
CAUSE	Pass cause, diagnostic, code in outbound packets.
DEDO	Delete called address from outbound calls.
DEGO	Delete calling address from outbound calls.
REGI	Replace calling address with configured Port Address in inbound calls.

Table 37:   X.25 Port Option Codes

Code	Description
REGO	Replace calling address with configured Port Address in outbound calls.
HOLD	Hold calls over link restart.
NRST	Do not send restart packet on link-up.
BKUP	This is a backup port to be activated if other ports are down.
SRGI	Select route by the calling address in inbound calls.
INL	Inter-node link. Link goes to another 6500 device.
INLA	Set with INL option when an X.25 link connection is to a 6500 node using 2.12.04 or earlier.
DADA	Delete called address in inbound/outbound call accept packets.
DAGA	Delete calling address in inbound/outbound call accept packets.
IADD	Include called and calling addresses in call accepted/connected packet.
DELAY	Enable Delay and Path trace on this link (link must connected to Rel. 4.xx node).

Billing
Indicates whether billing records will be created for calls on this port (`on` or `off`).

AlarmPriority
Indicates the severity level of LINK UP and LINK DOWN alarms (`network` = severity HIGH alarms will be generated; `access` = severity LOW alarms will be generated).

AddrTrans
The Address translation value.

PDN Information Table

This button accesses a table providing Public Data Network information for each X.25 port—see *PDN Information View* (Page 101).

Calling Table

This button accesses a table providing call statistics for each X.25 port—see *Call Statistics View* (Page 103).

Packet/Frame Statistics

This button accesses a table providing traffic statistics broken down by frame and packet type

for each X.25 port—see *Packet/Frame Statistics View* (Page 104).

Logical Link/Timer Statistics

This button accesses a view that provides tables of logical channel and timer statistics for each X.25 port—see *Channel Statistics View* (Page 105).

PDN Information View

Access: In the X.25 Configuration Table, click the **PDN Information Table** button.

This table provides Public Data Network (PDN) information for each of the device's X.25 ports. Column headings are as follows:

PortNo
Identifies a particular X.25 port.

DelFacil
Indicates which facilities will be deleted from an outbound call before it is forwarded: `NONE`=no facilities deleted; `THRO`=delete throughput class negotiation; `NUI`= delete network user identification; `CUG`=delete closed user group.

AddFacil
Indicates which facilities will be added to an outbound call before it is forwarded: `NONE`=no

facilities added; `REV`=add reverse charging; `PACK`=add packet size negotiation; `WIND`=add window size negotiation.

OutBarFacil
Identifies which facilities will be blocked on an outbound call: `NONE`=no facility blocked; `REV`= bar reverse charging; `FAST`=bar fast select; `BCUG`=bar bilateral closed user group; `DGRAM`=bar datagram.

InBarFacil
Identifies which facilities will be blocked on an inbound call: `NONE`=no facility blocked; `BCUG`=bar bilateral closed user group; `DGRAM`=bar datagram; `REV`=bar reverse charging.

RoutDigits
The number of routing digits in the call user data (used on X.25 links attached to a PDN where the private network address is carried in the call user data).

OutDigStrip
The number of prefix digits that will be removed from the called address before forwarding the call to a PDN.

InDigStrip
The number of prefix digits that will be removed from the incoming calling address before forwarding the call from a PDN.

SubAddrSize
The number of digits in the subaddress of an X.25 address.

FacilSubcrip
Identifies any facility subscriptions in effect for this port. Applicable codes and descriptions are listed in Table 38:

Table 38:   Facility Subscription Codes

Code	Description
NONE	Subscription to facilities not enforced.
FCN_ON	Flow Control Negotiation enabled. Packet and window size negotiation facilities in an inbound call will be allowed. Packet and window size facilities will always be included in outbound calls and call accepted/connected when this parameter is set.
FCN_OFF	Flow Control Negotiation disabled. Inbound calls containing packet and window size facilities will be cleared. Packet and window size facilities will not be present in outbound calls and call accepted/connected when this parameter is set.

Table 38: Facility Subscription Codes

Code	Description
TCN_ON	Throughput Class Negotiation enabled. The throughput class negotiation facility in an inbound call will be allowed. The throughput class negotiation facility will always be included in outbound calls and call accepted/connected when this parameter is set. The facility is passed onward to the destination in the call packet transparently and does not alter the handling of the SVC data within the node.
TCN_OFF	Throughput Class Negotiation disabled. Inbound calls containing the throughput class negotiation facility will be cleared. The throughput class negotiation facility will not be present in outbound calls and call accepted/connected when this parameter is set.

Call Statistics View

Access: *In the X.25 Configuration Table, click the* **Calling Table** *button.*

This view contains a table that provides call statistics for each of the device's X.25 ports. Column headings are as follows:

PortNo
Identifies a particular X.25 port.

Destn
All calls entering this port will be routed to any destination specified in this column, irrespective of route selection table entries.

PortAddr
For X.25 links with the REGO or REGI option selected, this address is inserted into the calling address field of the outbound or inbound call packet. For MUX links the subaddress of the channel is appended to this address and inserted into the calling address field of the call packet.

IdleTime
The time in seconds that the port must be idle (no calls) before being automatically disconnected. A value of zero disables the Idle Disconnect feature. This feature may only be enabled on DIMO/DIMOa/DIMOb/DIMOv/SIMPv ports with the BKUP option selected.

Security
For V.25bis backup ports, the type of call security to use prior to the link being detected up: if value is `disable`, both incoming and outgoing calls are allowed; if `enable`, only outgoing calls are allowed and incoming calls will be immediately terminated. This parameter is only used with Link Backup.

Protection
The level of data or connection protection specified for calls to or from this port (the actual level will be negotiated to the lesser of this level and the level configured for the other end of the call): `none` = no protection; `cpOnly` = connection protection only; `fullDcp` = full data and connection protection.

DCPTimeout
The number of seconds that DCP on the originating side will wait between reconnection attempts.

DCPRetry
The number of times that DCP on the originating side will attempt to reconnect before clearing the call.

Packet/Frame Statistics View

Access: *In the X.25 Configuration Table, click the* **Packet/Frame Statistics** *button.*

This view contains a table that provides packet and frame information for each of the device's X.25 ports. Column headings are as follows:

PortNo
Identifies a particular X.25 port.

InitFrame
Indicates the kind of frame (`sabm` or `disc`) required by other end for link startup. If value is `none`, the link is initiated by the other end.

FmNumbering
Indicates whether port uses normal (`norm`) or extended (`ext`) frame-level sequence numbering.

FmWindow
The frame-level window size. (This must be set to the same value in devices at each end of the link.)

PktNumbering
Indicates whether port uses normal (`norm`) or extended (`ext`) packet-level sequence numbering.

PktWindow
The packet-level window size. (This must be set to the same value in devices at each end of the link.)

PktSize
The maximum packet size in bytes. For proper operation, the size must be the same in devices at each end of the link.

MaxDataPkt
The maximum negotiated packet size allowed for inbound and outbound calls on this X.25 link.

PktQueue
The maximum number of data packets a channel on this port will queue for transmission before invoking flow control to the attached channel.

Channel Statistics View

Access: *In the X.25 Configuration Table, click the **Logical Link/Timer Statistics** button.*

This view contains two tables that provide logical channel and timer information for each of the device's X.25 ports.

Logical Channel Statistics

Column headings are as follows:

PortNo
Identifies a particular X.25 port.

LinkMode
Indicates whether logical devices at each end of the link will be Data Terminal Equipment (dte) or Data Communication Equipment (dce).

MaxPVCChan
The maximum number of logical channels that can be used for Permanent Virtual Circuits (PVCs) on this X.25 link. The total number of PVC and SVC (Switched Virtual Circuit) channels on a link should be kept as small as possible and consistent with needs. PVC connections must be configured in the PVC Table.

StartPVCChan
The starting logical channel number for the PVCs on this link. Not used if **MaxPVCChan** is zero.

MaxSVCChan
The maximum number of logical channels on this link that can be used for SVCs.

StartSVCChan
The starting logical channel number for the SVCs on this link.

Timer Statistics

Column headings are as follows:

T1Retry
The T1 link retry timer value, in tenths of a second.

T4Poll
The time, in tenths of a second, that an idle link will be probed for assurance of connection to the remote device. A value of zero indicates the timer is disabled. If enabled, this poll time value must be greater than **T1Retry**.

Restart
The number of seconds before a restart request will be repeated.

Reset

The number of seconds before a reset request will be repeated.

Call

The number of seconds before a call will be cleared.

Clear

The number of seconds before a clear request will be repeated.

X.25 Statistics Table View

Access: *From the **Icon Subviews** menu for the MotX25App Application icon, select **Port Statistics.***

This view contains a table that provides general X.25 port statistics. The view also has buttons that access two subtables containing ISDN call statistics and data statistics. Column headings for the general statistics are as follows:

PortNo

Identifies a particular X.25 port.

Status

Current status of the port. Valid values are: `up`, `down`, `disabled`, and `busy out`.

State

Code indicating the current state of the port as shown in the Table 39:

Table 39:   X.25 Port State Codes

Code	Description
1	Disconnect Phase.
2	Link Disconnect.
3	The port is sending SABM frames and waiting for a UA response.
4	SABM Collision.
5	The port has rejected a received frame.
6	The port is sending/receiving data.
7	The port is receiving RNR frames.
8	The port is being reset.
9	The port is sending REJ frames.
10	The port is receiving RNR frames and sending REJ frames.

Speed

The speed of the port when clocking is internal or the detected clock speed if clocking is external.

UtilIN

Percentage of port bandwidth in use for incoming traffic.

UtilOut
Percentage of port bandwidth in use for outgoing traffic.

MaxSVC
Maximum number of SVCs in use since last node, port or statistics reset.

CurrSVC
Current number of SVCs in use.

ISDN Call Status

This button accesses a table providing ISDN call statistics for each X.25 SVC port—see *ISDN Call Statistics Table View* (Page 107).

DATA Statistics

This button accesses a set of tables providing traffic breakdowns by character, frame, and packet for each X.25 port—see *Data Statistics View* (Page 108).

ISDN Call Statistics Table View

Access: *In the X.25 Statistics Table view, click the **ISDN Call Status** button.*

This view contains a table that provides ISDN call statistics for each X.25 port. These statistics are only valid for (virtual) switched data ports. Column headings are as follows:

PortNo
Identifies a particular X.25 port.

NumRx
The number of inbound calls that were attempted since the last statistics reset.

RxReject
The number of inbound calls that were rejected since the last statistics reset.

RxLastFail
Code indicating the reason the last inbound call was rejected, as shown in the following table:

Table 40: Last Failure Codes

Code	Description
100	Value not available because port is not SVC.
193	No call failure reported.
194	No virtual port available.
195	Password security failed.
196	No resources available.
197	Call rejected by Xircom card.
198	Invalid phone number.
199	Outgoing call request timeout.

Table 40:   Last Failure Codes

Code	Description
200	Call collision.
201	This port not available.
202	Configuration invalid.
203	Failure is not supported.

RxLastNum
The phone number of the virtual port of the last ISDN call made into this port.

RxMinDur
The shortest duration of any inbound ISDN call into this port since the last statistics reset.

RxMaxDur
The longest duration of any inbound ISDN call into this port since the last statistics reset.

RxAvgDur
The average call duration of all inbound ISDN calls into this port since the last statistics reset.

NumTx
The number of outbound calls that were attempted since the last statistics reset.

TxReject
The number of outbound calls that were rejected since the last statistics reset.

TxLastFail
Code indicating the reason the last inbound call was rejected (see Table 40 for descriptions).

TxLastNum
The phone number of the virtual port of the last ISDN call made from this port.

TxMinDur
The shortest duration of any outbound ISDN call from this port since the last statistics reset.

TxMaxDur
The longest duration of any outbound ISDN call from this port since the last statistics reset.

TxAvgDur
The average call duration of all out bound ISDN calls into this port since the last statistics reset.

Data Statistics View

Access: *In the X.25 Statistics Table view, click the **DATA Statistics** button.*

This view contains three tables that provide X.25 port statistics for characters, frames, and packets respectively.

Char Info

The Character Information table within the Data Statistics view has the following column headings:

PortNo
Identifies a particular X.25 port.

CharIn
Number of characters received since last node, port, or statistics reset.

CharOut
Number of characters sent since last node, port, or statistics reset.

CharRateIn
Average number of characters, per second, being received by the port.

CharRateOut
Average number of characters, per second, being sent by the port.

OverrunErr
Number of overrun errors since the last node or statistics reset.

UnderrunErr
Number of underrun errors since the last node or statistics reset.

Packet Info

The Packet Information table within the Data Statistics view has the following column headings:

InPkts
Number of packets received since last node, port, or statistics reset.

OutPkts
Number of packets sent since last node, port, or statistics reset.

Queued
Number of packets currently queued.

RateIN
Average number of packets, per second, being received by the port.

RateOut
Average number of packets, per second, being sent by the port.

DataIN
Number of data packets received since last node, port or statistics reset.

DataOut
Number of data packets sent since last node, port or statistics reset.

Frame Info

The Frame Information table within the Data Statistics view has the following column headings:

InData

Number of frames received since last node, port, or statistics reset.

OutData

Number of frames sent since last node, port, or statistics reset.

RateIN

Average number of frames per second being received by the port.

RateOUT

Average number of frames per second being sent by the port.

InInfo

Number of info frames received since last node, port, or statistics reset.

OutInfo

Number of info frames sent since last node, port, or statistics reset.

InRNR

Number of frames received since last node, port, or statistics reset indicating RNR.

OutRNR

Number of frames sent since last node, port or statistics reset indicating RNR.

InRR

Number of frames received since last node, port, or statistics reset indicating RR.

OutRR

Number of frames sent since last node, port or statistics reset indicating RR.

InREJ

Number of frames received since last node, port, or statistics reset indicating REJ.

OutREJ

Number of frames sent since last node, port or statistics reset indicating REJ.

Translation Configuration Table View

Access: *From the **Icon Subviews** menu for the MotX25App Application icon, select **Translation Table.***

This view contains a table that provides translation information for inbound and outbound calls. Entries in each section are sequentially indexed.

Inbound

This section displays the following information:

InSubAddr

The subaddress contained in an inbound call from another network, usually a public data network (PDN). It will be translated into a private network address before the call is forwarded.

PrivNetAddr

The private network address to which calls from a PDN will be translated before forwarding.

Outbound

This section displays the following information:

PrivNetAddr

The private network address contained in an outbound call to another network, usually a PDN. It will be translated into a PDN address before the call is forwarded.

OutNetAddr

The public network address to translate to before forwarding calls to a PDN.

Options

If value is `olda`, the original called address is inserted into outbound call user data. Otherwise, value is `none`.

Address

This section displays the following information:

InSubAddr

The subaddress contained in an inbound call from another network, usually a PDN. It will be translated into a private network address before the call is forwarded.

PrivNetAddr

The private network address to which calls from a PDN will be translated before forwarding.

Motorola Vanguard Frame Relay Applications (MotFRDTEApp and MotFRDCEApp)

There are two Motorola Vanguard Frame Relay applications:

Frame Relay DTE Application

The MotFRDTEApp has the following views available from the Icon Subviews menu:

Port Configuration

This option displays the DTE Port Configuration view. This view shows the value of objects from the Motfrdte_Mib's Frame Relay DTE Port

Configuration Table, which contains configuration parameters for the Frame Relay DTE Port table.

Port Statistics

This option displays the DTE Port Statics view. This view shows the value of objects from the Motfrdte_Mib's the Frame Relay DTE Port Statistics Table, which contains statistical parameters for the Frame Relay DTE Port table.

Station Configuration

This option displays the DTE Station Table Configuration view. This view shows the value of objects from the Motfrdte_Mib's Frame Relay DTE Station Configuration Table, which contains configuration parameters for the Frame Relay DTE Station table.

Station Statistics

This option displays the DTE Station Table Statistics view. This view shows the value of objects from the Motfrdte_Mib's Frame Relay DTE Station Statistics Table, which contains statistical parameters for the Frame Relay DTE Station table.

Model Information

This opens the Model Information view for the application model. For more information on this view, see **SPECTRUM Views (2517)**.

Frame Relay DCE Application

The MotFRDCEApp has the following views available from the Icon Subviews menu:

Port Configuration Table

This option displays the DCE Port Configuration view. This view shows the value of objects from the Motfrdce_Mib's Frame Relay DCE Port Configuration Table, which contains configuration parameters for the Frame Relay DCE Port table.

Port Statistics Table

This option displays the DCE Port Statics view. This view shows the value of objects from the Motfrdce_Mib's the Frame Relay DCE Port Statistics Table, which contains statistical parameters for the Frame Relay DCE Port table.

Station Configuration Table

This option displays the DCE Station Table Configration view. This view shows the value of objects from the Motfrdce_Mib's Frame Relay DCE

Station Configuration Table, which contains configuration parameters for the Frame Relay DCE Station table.

Station Statistics Table

This option displays the DCE Station Table Statistics view. This view shows the value of objects from the Motfrdce_Mib's Frame Relay DCE Station Statistics Table, which contains statistical parameters for the Frame Relay DCE Station table.

Model Information

This opens the Model Information view for the application model. For more information on this view, see **SPECTRUM Views (2517)**.

Configuration Views

This section describes the various Configuration views and subviews available for models of Motorola Vanguard devices in SPECTRUM.

Configuration views allow you to view and modify current settings for the modeled device and its interfaces, ports, and applications. The following Configuration views are available for models of Motorola Vanguard devices:

- *Device Configuration View* (Page 114)
- *Interface Configuration View* (Page 115)

Device Configuration View

Access: From the **Icon Subviews** menu for the MotMPRouter Device icon, select **Configuration**.

This view (Figure 6) provides status and configuration information about the device as a whole as well as on a port-by-port basis. It also provides button access to an Interface Address Translation table and a subview that lets you establish redundancy for the model. Fields and column headings within the Device Configuration view and its subviews are explained in detail in **SPECTRUM Views**.

Figure 6: Device Configuration View
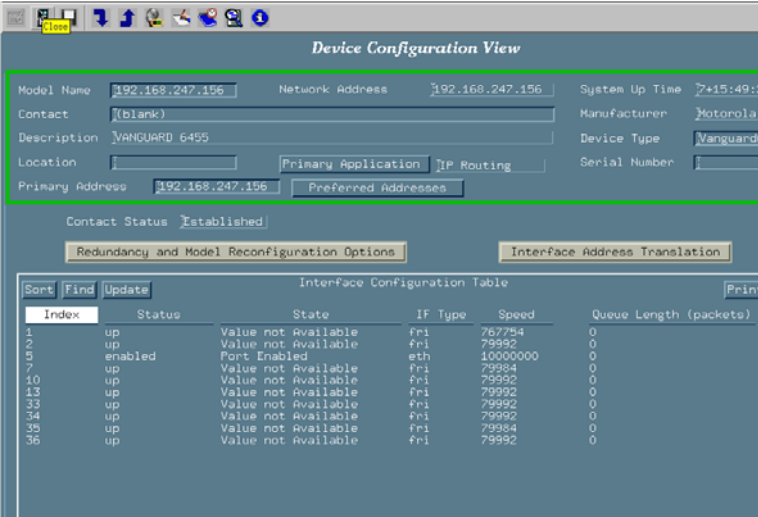
Interface Configuration View

*Access: From the **Icon Subviews** menu for a selected Interface icon in the Interface Device view, select **IF Configuration**.*

This view provides the following information for the selected interface:

Operation Status
The current operational state of the interface. Valid values are: On, Off, or Testing.

Admin. Status
The desired operational state of the interface. Valid values are: On, Off, or Testing.

Last Change
The 'System UpTime' value when the interface entered its current operational state.

IP Address/Network Mask
This window provides a list of the user-defined names and IP addresses for the interface.

Physical Address
The Ethernet (MAC) address of the interface.

Bandwidth
The estimated bandwidth of the interface, measured in bits per second. For interfaces that do not vary in bandwidth, or no accurate estimate can be made, a nominal bandwidth is provided.

Packet Size
The largest packet that can be transmitted or received by the port, displayed in octets.

Queue Length
The length of the outbound packet queue, in packets.

Traps, Events, and Alarms

This section provides you with an overview of trap, event, and alarm support.

This section describes any device-specific events and alarms supported by the Motorola Vanguard (SM-MOT1000) management module.

- *Standard Trap Support* (Page 116)
- *Vanguard 300/320 Trap Support* (Page 116)
- *Vanguard 6400 and 6500 Trap Support* (Page 118)

Standard Trap Support

The following standard traps are supported for Vanguard 300, 320, 6400 and 6500 devices.

Table 41:   Standard Trap Support

Standard Trap Name	OID
coldStart	0.0
warmStart	1.0
linkDown	2.0
linkUp	3.0
authenticationFailure	4.0
egpNeighborLoss	5.0

Vanguard 300/320 Trap Support

The supported device-specific traps for Vanguard 300/320 devices are listed in Table 42 (Page 117). In the OID column of this table, <model> should be replaced with the model number of the Vanguard device, i.e. 300 or 320.

Table 42:   Vanguard 300 Trap Support

Trap Name	OID	Variable Bindings	Event Generated	Alarm Generated	Alarm Severity
unknown-card-type	1.3.6.1.4.1.449.2.1.<model>.6.106002	1.3.6.1.4.1.449.2.1.1.1.7	0x0258000b	None	
tbopPort-boot	1.3.6.1.4.1.449.2.1.<model>.6.126000	1.3.6.1.4.1.449.2.1.1.1.7	0x0258000f	None	
tbopPort-boot-fail	1.3.6.1.4.1.449.2.1.<model>.6.126001	1.3.6.1.4.1.449.2.1.1.1.7	0x02580010	0x02580010	Yellow
tbopPort-disable	1.3.6.1.4.1.449.2.1.<model>.6.126002	1.3.6.1.4.1.449.2.1.1.1.7	0x02580011	None	
tbopPort-enable	1.3.6.1.4.1.449.2.1.<model>.6.126004	1.3.6.1.4.1.449.2.1.1.1.7	0x02580012	None	
tbopPort-util-exceeded	1.3.6.1.4.1.449.2.1.<model>.6.126006	1.3.6.1.4.1.449.2.1.1.1.7	0x02580013	0x02580013	Yellow
tbopPort-busyout	1.3.6.1.4.1.449.2.1.<model>.6.126008	1.3.6.1.4.1.449.2.1.1.1.7	0x02580014	None	
tbop-port-status-warning	1.3.6.1.4.1.449.2.1.<model>.6.126010	1.3.6.1.4.1.449.2.1.1.1.7	0x02580015	None	
node-boot-for-rout-tables	1.3.6.1.4.1.449.2.1.<model>.6.16004	1.3.6.1.4.1.449.2.1.1.1.7	0x0258000d	0x0258000d	Orange
node-boot-for-pvc	1.3.6.1.4.1.449.2.1.<model>.6.16005	1.3.6.1.4.1.449.2.1.1.1.7	0x0258000e	0x0258000d	Orange
port-util-exceeded	1.3.6.1.4.1.449.2.1.<model>.6.17000	1.3.6.1.4.1.449.2.1.1.1.7	0x02580003	0x02580003	Yellow
cpu-util-exceeded	1.3.6.1.4.1.449.2.1.<model>.6.17002	1.3.6.1.4.1.449.2.1.1.1.7	0x02580004	0x02580004	Yellow
watchdog-timeout-node-reset	1.3.6.1.4.1.449.2.1.<model>.6.19001	1.3.6.1.4.1.449.2.1.1.1.7	0x02580005	0x02580005	Orange
node-boot	1.3.6.1.4.1.449.2.1.<model>.6.19002	1.3.6.1.4.1.449.2.1.1.1.7	0x02580006	None	
crash-node-reset	1.3.6.1.4.1.449.2.1.<model>.6.19003	1.3.6.1.4.1.449.2.1.1.1.7	0x02580007	None	
node-coldstart	1.3.6.1.4.1.449.2.1.<model>.6.19005	1.3.6.1.4.1.449.2.1.1.1.7	0x02580008	None	
node-warmstart	1.3.6.1.4.1.449.2.1.<model>.6.19006	1.3.6.1.4.1.449.2.1.1.1.7	0x02580009	None	
port-boot-failure	1.3.6.1.4.1.449.2.1.<model>.6.2001	1.3.6.1.4.1.449.2.1.1.1.7	0x02580001	0x02580001	Yellow
node-boot-for-mnem	1.3.6.1.4.1.449.2.1.<model>.6.21000	1.3.6.1.4.1.449.2.1.1.1.7	0x0258000a	0x0258000a	Orange
cmem-corrupted	1.3.6.1.4.1.449.2.1.<model>.6.4000	1.3.6.1.4.1.449.2.1.1.1.7	0x0258000c	0x0258000c	Orange

Vanguard 6400 and 6500 Trap Support

The Vanguard 6400 and 6500 series of devices support approximately 1990 proprietary traps from the vanguard-65xx-trap.mib MIB. The trap OIDs supported are in the range `1.3.6.1.4.1.449.2.1.6.1000 -> 1.3.6.1.4.1.449.2.1.6.426019`. Each of these traps is processed directly on the device model in SPECTRUM and is represented in the AlertMap file, including a comment line that contains the trap name.

The vanguard-65xx-trap.mib defines the severity of individual traps in comments within the MIB. For example, the code-power-supply-down trap is defined as CRITICAL.

When mapping traps to events in the AlertMap file, the SEVERITY comment is used to determine which event should be generated for the the trap. Based on severity, each trap will be mapped to one of five unique events (Table 43):

Table 43:   Vanguard 6400 Events

Unique Event Generated	Event Severity	Event or Alarm Generated	Event Logged
0x02580020	Information	Event Only	No
0x02580025	Warning	Event Only	No
0x02580030	Minor	Event Only	No
0x02580040	Major	Event Only	No
0x02580050	Critical	Event and Red Alarm	Yes

The code-power-supply-down trap is CRITICAL so we will generate the `0x2580050` event, which is defined as critical and will result in an alarm.

Note: Each of the traps in the vanguard-65xx-trap.mib contain a common variable binding (`cdx6500SNMPLastTrap`) which is displayed in the EvFormat message and can contain trap-specific variable data in a format defined by the vanguard-65xx-trap.mib. This variable data can be used to create event rules with the Event Condition rule. For more information on event rules, see the ***Event Configuration Files Guide (5070).***

Advanced Application Integrations

This section describes the Frame Relay integration that is available for this management module.

Motorola Vanguard Frame Relay Integration

The Motorola Vanguard Frame Relay integration is available when a SPECTRUM installation includes the Motorola Vanguard management module and SPECTRUM's Frame Relay Manager.

This integration uses four model types that allow you to effectively model and manage Motorola Vanguard devices that operate in a Frame Relay environment. MotFRDTEApp and MotFRDCEApp are the application model types that support the Motfrdte_Mib and the Motfrdce_Mib. MotDTEDLCI and MotDCEDLCI are the sub-interface model types that allows you to manage Data Terminal Equipment (DTE) and Data Circuit-Terminating Equipment (DCE) DLCI ports on Motorola Vanguard devices.

The MotFRDTEAPP and MotFRDCEApp model types are available when the Motorola Vanguard

management module is installed. See the *Motorola Vanguard Frame Relay Applications (MotFRDTEApp and MotFRDCEApp)* (Page 111) section for more information.

The MotDTEDLCI and MotDCEDLCI model types are not available unless both SPECTRUM's Frame Relay Manager and the Motorola Vanguard management module are installed.

The following sections give an overview of the DLCI model types and their views:

- *Motorola Vanguard Frame Relay DTE DLCI Port Model* (Page 120)

- *Motorola Vanguard Frame Relay DCE DLCI Port Model* (Page 121)

See the ***Frame Relay Manager User Guide (2102)*** for complete information on SPECTRUM's Frame Relay Manager.

Motorola Vanguard Frame Relay DTE DLCI Port Model

The MotDTEDLCI is a sub-interface model type which represents the DTE ports on Motorola Vanguard devices.

The following sections give a brief description of the subviews available from the Icon Subviews menu for these DLCI port model types. The MotDTEDLCI model type has much of the same functionality as the Frame Relay Manger DLCI_Port model type. Features unique to the MotDTEDLCI subviews are noted in the descriptions below. Additional details about each view can be found in the "Managing Frame Relay Networks" section of the ***Frame Relay Manger User Guide (2102).***

Note: Autodiscovery will not resolve connectivity to MotDTEDLCI models. However, it is possible to use the Frame Relay Manager wanimport tool to map connections to MotDTEDLCI models in the same manner as other DLCI ports. See the "Importing Connectivity Information" section of the ***Frame Relay Manager User Guide (2102)*** for complete instructions.

Information

This view allows you to set polling and logging information for the port model. It is possible to configure SPECTRUM to poll DLCI ports at regular intervals. When SPECTRUM polls these ports it captures the values of various external MIB objects. You can choose to log these values and use them for monitoring and analyzing the performance of a port.

Port Performance

This view shows graphs of two sets of statistics. The top graph shows Ingress Traffic vs. Bandwidth, and the bottom graph shows Egress Traffic vs. Bandwidth.

Port Configuration

The Port Configuration view displays external MIB objects corresponding to the DLCI that the port represents.

Port Threshold

The Port Threshold view establishes levels of activity that will generate alarms.

Service Information

The DLCI_Port Service Information view provides information about service providers associated with the frame relay network. All service information is entered manually and is provided for reference purposes only.

Port Statistics

The Port Statistics view is not available from the Frame Relay Manger DLCI_Port model type. It shows statistics for this DTE port from the Cdx6500SPSTFRDCEStation table of the the vanguard-65xx-frdce.mib.

Motorola Vanguard Frame Relay DCE DLCI Port Model

The MotDCEDLCI is a sub-interface model type which represents the DCE DLCI ports on Motorola Vanguard devices.

The following sections give a brief description of the subviews available from the Icon Subviews menu for these DLCI port model types. The MotDCEDLCI model type has much of the same functionality as the Frame Relay Manger DLCI_Port model type. Features unique to the MotDCEDLCI subviews are noted in the descriptions below. Additional details about each view can be found in the "Managing Frame Relay Networks" section of the ***Frame Relay Manger User Guide (2102).***

Note: Autodiscovery will not resolve connectivity to MotDCEDLCI models. However, it is possible to use the Frame Relay Manager wanimport tool to map connections to MotDCEDLCI models in the same manner as other DLCI ports. See the "Importing Connectivity Information" section of the ***Frame Relay Manager User Guide (2102)*** for complete instructions.

Information

This view allows you to set polling and logging information for the port model. It is possible to configure SPECTRUM to poll DLCI ports at regular intervals. When SPECTRUM polls these ports it captures the values of various external MIB objects. You can choose to log these values and use them for monitoring and analyzing the performance of a port.

Port Configuration

This view differs from the standard DLCI Port Configuration view. It shows external MIB objects specific to the DCE that the port represents

Port Threshold

The Port Threshold view establishes levels of activity that will generate alarms.

Service Information

The DLCI_Port Service Information view provides information about service providers associated with the frame relay network. All service information is entered manually and is provided for reference purposes only.

Port Statistics

This view is not available from a standard DLCI port. It shows statistics for this DCE port from the Cdx6500SPSTFRDTEStation table of the vanguard-65xx-frdte.mib.

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